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Behavioral Economics and Health Policy: Understanding Medicaid's Failure

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BEHAVIORAL ECONOMICS AND HEALTH POLICY: UNDERSTANDING MEDICAID'S FAILURE

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This Article employs a behavioral economic analysis to understand why Medicaid has failed to improve the health outcomes of its beneficiaries. It begins with a formal economic model of health care consumption and then systematically incorporates a survey of psychosocial variables to formulate explanations for persistent health disparities. This methodology suggests that consulting the literature in health psychology and intertemporal decision theory—empirical sources generally excluded from orthodox economic analysis—provides valuable material to explain certain findings in health econometrics. More significantly, the lessons from this behavioral economic approach generate useful policy considerations for Medicaid policymakers, who largely have neglected psychosocial variables in implementing a health insurance program that rests chiefly on orthodox economic assumptions.

The Article's chief contributions include an expansion of the behavioral economic approach to include a host of variables in health psychology, a behavioral refinement of empirical health economics, a behavioral critique of Medicaid policy, and a menu of suggested Medicaid reforms.

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INTRODUCTION

The plight of Americans without health insurance has been a popular call to arms for politicians, and demands for expanded coverage for the uninsured continue today.[1] Salient stories abound about working families who cannot afford health insurance and live in fear of a work-limiting injury,[2] small businesses that struggle to meet rising

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1 Among the recent efforts to expand health insurance is *Cover the Uninsured*, a project headed by the Robert Wood Johnson Foundation that includes labor, business, philanthropic, and health care professional leaders. *See* About the Week, Cover the Uninsured, *at* http://covertheuninsuredweek.org/about (last visited Dec. 19, 2004). This effort aims to reverse the increase in the population of uninsured Americans by "elevating this issue on the national and local agendas, educating Americans about the problem and providing immediate assistance to the uninsured and small business owners." *Id.* The Henry J. Kaiser Family Foundation, the American College of Physicians, and numerous state-based organizations, like California's 100% Campaign, are leading similar public campaigns. *See* Health Care & the Uninsured, Kaiser Family Foundation, *at* http://www.kff.org/uninsured/index.cfm (last visited Dec. 19, 2004); Where We Stand: Access to Care, American College of Physicians, *at* http://www.acponline.org/hpp/menu/access.htm (last visited Dec. 19, 2004); About the 100% Campaign, 100% Campaign, *at* http://www.100percentcampaign.org/about-us.htm (last visited Dec. 19, 2004).

2 Shawn Hegdal, an uninsured mother of four from Bozeman, MT, writes:

> My husband is a self-employed logger. Logging is one of the most dangerous professions in the United States. But it's not just his physical health I worry about—it's also our family's well being. We have no health insurance. If Greg is injured and can't work, we would be wiped out. I don't know what we would do.

About the Issue: Personal Stories, Cover the Uninsured, *at* http://covertheuninsuredweek.org/stories (last visited Mar. 2004).

insurance premiums,[3] and uninsured individuals who die from treatable illnesses.[4] Policymakers first responded to such stories in 1965 with the establishment of Medicaid,[5] a program designed to provide health insurance to poor families who satisfied the Aid to Families with Dependent Children (AFDC) eligibility requirements.[6] The next three decades saw numerous expansions of the Medicaid program, including the extension of Medicaid benefits to the elderly and disabled poor in 1972 (with the establishment of the Supplemental Security Income program),[7] to pregnant women and their infants beginning

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3 Nancy Potter writes:

> For nearly 25 years, I owned a bakery in the tiny farming town of New Glarus, Wisconsin, population 2,000. I had about 20 employees and became close to all of them over the years. So it was with great heartache that I had to announce in the fall of 2000 that we could no longer provide health insurance for our workers. We had received a notice that our health insurance provider was leaving our region. When we sought coverage from other companies, even the least expensive quotes we received represented a 180 percent increase in annual premiums. That meant we would have had to pay an additional $50,000 each year to continue offering coverage. With annual gross sales of about $650,000, we simply couldn't afford such an increase.

Id.

4 Susan Garrett, RN, a nurse in Brandywine, MD, writes:

> Have you ever looked into the eyes of a child after telling his desperately ill mother that you couldn't help her? I have. It was the most horrible experience of my life . . . We should be ashamed that, with everything we have to offer, people who work hard to support their families frequently find that there is nothing for them when they are sick. Why? Because they can't afford health insurance.

Id.

5 Title XIX of the Social Security Act authorizes federal funds to establish a state-federal cooperative program authorizing medical assistance programs for the poor. *See* Amendments to Social Security Act, Pub. L. No. 89-97, 79 Stat. 343 (1965) (codified at 42 U.S.C. § 1396 (2000)). When President Johnson signed the Medicare and Medicaid Bill (Title XVIII and Title XIX of the Social Security Act) on July 30, 1965, he remarked, "we marvel not simply at the passage of this bill but what we marvel at is that it took so many years to pass it." Remarks with President Truman at the Signing in Independence of the Medicare Bill, 2 PUB. PAPERS 811, 812 (July 30, 1965), *available at* http://www.ssa.gov/history/lbjstmts.html#medicare.

6 Medicaid is a cooperative federal-state program. States develop individual Medicaid budgets based on their own eligibility standards and benefits coverage, and then federal matching funds supplement state budgetary expenditures based on a formula that depends on a state's median family income. State participation is voluntary, but states that elect to administer the program (all of them do, and all of them always have) must have their plans comply with certain nominal federal requirements. *See* Frew *ex rel.* Frew v. Hawkins, 540 U.S. 431, 433–36 (2004). The AFDC program was renamed "Temporary Assistance for Needy Families" ("TANF") by the Welfare Reform Law of 1996. *See* Personal Responsibility and Work Opportunity Reconciliation Act of 1996, Pub. L. No. 104-193, 110 Stat. 2105 (1996).

7 Pub. L. No. 92-603, Title III, § 301, 86 Stat. 1465 (1972) (codified at 42 U.S.C. § 1381 (2000)).

in 1986,[8] and shortly afterwards to all children from families below the federal poverty level.[9]

Unfortunately, these very considerable legislative efforts have been misguided. To be sure, Medicaid programs have succeeded in providing access to medical care for many low-income Americans. In 2002, for example, the program provided health coverage to 50 million Americans, including 25 million children, 13 million low-income adults with children, eight million individuals with disabilities, and five million seniors.[10]

But providing access to health care means little if it does not produce substantial improvements in health, and after nearly four decades of Medicaid, with annual spending that reached $247.7 billion in 2002,[11] there remains a strong correlation in the United States between income and health—even for those covered by Medicaid and other public programs. The poor continue to suffer from higher mortality rates, experience higher morbidity, and self-report significantly less-healthy lives than their middle and upper class counterparts.[12]

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8 Most of these expansions occurred through Omnibus Budget Reconciliation Acts. *See* U.S. GEN. ACCOUNTING OFFICE, PRENATAL CARE: EARLY SUCCESS IN ENROLLING WOMEN MADE ELIGIBLE BY MEDICAID EXPANSIONS 7–8 (1991) (discussing the federal expansions of Medicaid coverage for pregnant women and the subsequent state expansions); *see also* John D. Klemm, *Medicaid Spending: A Brief History*, 22 HEALTH CARE FIN. REV. 105, 106–11 (2000) (tracing reforms of the Medicaid program from 1966 through 1999).

9 *See* Klemm, *supra* note 8, at 108–09. It is worth noting that these Medicaid expansions may have caused some adverse consequences for the beneficiaries the program originally targeted in 1965. In 2002, children and adults in TANF-eligible families comprised 75% of Medicaid beneficiaries but received only 30% of Medicaid funds, whereas the non-elderly disabled and elderly constituted 16% and 9% of Medicaid's beneficiaries, respectively, and received 43% and 27% of Medicaid funds. *See* KAISER COMMISSION ON MEDICAID AND THE UNINSURED, THE HENRY J. KAISER FAMILY FOUNDATION, THE MEDICAID PROGRAM AT A GLANCE 1 Fig. 2 (2004), *at* http://www.kff.org/medicaid/2004-04.cfm [hereinafter THE MEDICAID PROGRAM AT A GLANCE]. Since Medicaid is a discretionary expenditure for both the federal and state governments, budgetary pressures have forced reductions in per-beneficiary expenditures on the program, and in some States the program's funds are even directed away from the originally-targeted beneficiaries. *See* VERNON SMITH ET AL., KAISER COMMISSION ON MEDICAID AND THE UNINSURED, THE HENRY J. KAISER FOUNDATION, STATES RESPOND TO FISCAL PRESSURE: A 50-STATE UPDATE OF STATE MEDICAID SPENDING GROWTH AND COST CONTAINMENT ACTIONS 3–8, 12 (2004), *at* http://www.kff.org/medicaid/upload/30453_1.pdf.

10 THE MEDICAID PROGRAM AT A GLANCE, *supra* note 9, at 1.

11 CENTERS FOR MEDICARE & MEDICAID SERVICES, 2003 DATA COMPENDIUM 3 (2003), *at* http://www.cms.hhs.gov/researchers/pubs/datacompendium/current. This figure includes both state and federal computable benefit payments. *Id.* Approximately 69% of Medicaid funds go to the non-elderly poor. CENTERS FOR MEDICARE & MEDICAID SERVICES, PROGRAM INFORMATION ON MEDICAID & STATE CHILDREN'S HEALTH INSURANCE PROGRAM 14 (2004), *at* http://www.cms.hhs.gov/charts/medicaid/InfoMedicaid_schip.pdf.

12 The correlation between income and mortality, for example, is quite substantial. A 1995 study observed that, even when controlling for education, employment, and other demographics, individuals under 65 with family incomes of greater than $50,000 experienced mortality rates more than 30% lower than similarly aged individuals with family incomes of less than $5,000. Paul D. Sorlie et al., *US Mortality By Economic, Demographic, and*

Researchers thoroughly documented this correlation in the 100 years prior to the passage of the Medicaid Bill in 1965,[13] and the correlation has remained robust—and disparities have in fact increased—through the 1980s and 1990s despite the several decades of legislative accomplishments.[14] Moreover, while class-based health inequalities have been observed in nearly all industrialized nations, the United States is home to the greatest disparities.[15] Although extending health insurance to the poor undoubtedly resolves some health problems,[16] the core inequality remains.[17] Public debates and legislative efforts have

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Social Characteristics: The National Longitudinal Mortality Study, 85 AM. J. PUB. HEALTH 949, 951–52 tbl. 2 (1995). Other studies reveal that the impact of income on health is greater at lower incomes, whereas education has a more significant effect on mortality at higher incomes. Eric Backlund et al., *A Comparison of the Relationships of Education and Income with Mortality: The National Longitudinal Mortality Study*, 49 SOC. SCI. & MED. 1373, 1377 (1999). For an overview of the positive correlation between wealth and health, see generally James P. Smith, *Healthy Bodies and Thick Wallets: The Dual Relation Between Health and Economic Status*, 13 J. ECON. PERSP. 145 (1999).

Some scholars, particularly social psychologists, instead focus on the positive correlation between health and socioeconomic status (SES), a composite measure of income, education, and occupation. *See generally* Nancy E. Adler et al., *Socioeconomic Status and Health: The Challenge of the Gradient*, 49 AM. PSYCHOLOGIST 15 (1994) (discussing the correlation between health behaviors, socioeconomic status, and health outcomes).

13 *See, e.g.*, Aaron Antonovsky, *Social Class, Life Expectancy, and Overall Mortality*, 45 MILBANK MEMORIAL FUND Q. 31 (1967); Rollo H. Britten, *Mortality Rates By Occupational Class in the United States*, 49 PUBLIC HEALTH REP. 1101 (1934); Charles V. Chapin, *Deaths Among Taxpayers and Non-Taxpayers: Income Tax, Providence, 1865*, 14 AM. J. PUB. HEALTH 647 (1924).

14 *See* Adler et al., *supra* note 12, at 15–16; Jacob J. Feldman et al., *National Trends in Educational Differentials in Mortality*, 129 AM. J. EPIDEMIOLOGY 919, 923–28 (1989) (discussing inverse correlation found between educational attainment and mortality); Gregory Pappas et al., *The Increasing Disparity in Mortality Between Socioeconomic Groups in the United States, 1960 and 1986*, 329 NEW ENG. J. MED. 103, 103 (1993); Smith, *supra* note 12, at 146–49. What is particularly striking about the persistence of these health and mortality disparities over time is that they cover a period in which the relative prevalence of different causes of death has changed dramatically. *See, e.g.*, Abdel R. Omran, *A Century of Epidemiologic Transition in the United States*, 6 PREVENTIVE MED. 30, 40–43 (1977).

15 *See* Anton E. Kunst & Johann P. Mackenhach, *The Size of Mortality Differences Associated with Educational Level in Nine Industrialized Countries*, 84 AM. J. PUB. HEALTH 932, 935 tbl. 3 (1994) (finding that disparities in mortality rates between men ages 35–44 of different education levels was higher in the United States than in the eight other European countries in the study, and that mortality rate disparities for olden men in the United States were matched only by those of France).

16 Extending insurance most easily addresses the specific problem where a poor individual suffers from a treatable chronic condition, such as diabetes, schizophrenia, and certain heart conditions. There is little systematic research that quantifies the frequency of this problem, but there is substantial anecdotal evidence. *See, e.g., All Things Considered: Indiana's Medicaid Program* (NPR radio broadcast, Apr. 26, 2001) (reporting that an Indiana state rule regarding Medicaid eligibility denied coverage for treatment of curable disabilities and led to several avoidable deaths).

17 Moreover, there is additional evidence that the legislative efforts underpinning Medicaid expansions have failed even to accomplish what they were designed to do. Despite its hefty budget, Medicaid has not kept up with the growing pool of the uninsured. In 2002, for example, 43.3 million Americans—or 17% of the non-elderly population, including 9.3 million children—were without health insurance. KAISER COMMISSION ON MEDICAID

fretted over insurance when instead they should have focused on health.[18]

This Article argues that Medicaid's failure to mitigate America's health disparities along class lines reflects, in part, policymakers' poor understanding of the behavioral component of health care consumption. Throughout the three-decade legislative history of expanding medical coverage for the poor, Congress's core policy strategy has essentially remained the same: Medicaid and its tributaries amount to an insurance program for medical care.[19] The umbrella of Medicaid programs supplies beneficiaries with insurance coverage for certain services provided by medical professionals, and as eligible individuals seek care at approved facilities, state and federal funds reimburse providers. This policy fails to appreciate that health care and health insurance are unlike other forms of government assistance, such as food stamps or welfare checks, that supply beneficiaries with commodities that offer immediate enjoyment. The translation of health insurance into better health is far less reliable than the corresponding conversion of welfare checks into income or food stamps into nourishment.

AND THE UNINSURED, THE HENRY J. KAISER FAMILY FOUNDATION, THE UNINSURED: A PRIMER 2, 4 (2003), *at* http://www.kff.org/uninsured/upload/29345_1.pdf. The pool of uninsured children is largely the result of eligible individuals failing to enroll in Medicaid programs, since nearly all of the 9.3 million uninsured children are eligible for public insurance. This suggests that targeted beneficiaries are not behaving in ways predicted by Medicaid policymakers. *See infra* Part I.

18 Another justification given for the Medicaid program, in addition to providing coverage and improving health outcomes for the poor, is to reduce the social costs of "job-lock," which occurs when an employee remains with a certain employer, rather than pursuing other employment opportunities, solely because of the employer-provided health insurance. Some scholars have discussed state-sponsored health insurance as a possible solution to job-lock. *See, e.g.*, Jonathan Gruber & Brigitte C. Madrian, *Health Insurance and Job Mobility: The Effects of Public Policy on Job-Lock*, 48 INDUS. & LAB. REL. REV. 86, 100 (1994); *see also* Brigitte C. Madrian, *Employment-Based Health Insurance and Job Mobility: Is There Evidence of Job-Lock?*, 109 Q. J. ECON. 27 (1994) (finding the "job-lock" relationship between employment and health insurance to be substantial). While some research has examined the effect of "continuation of coverage" mandates on the preponderance of job-lock, *see* Gruber & Madrian, *supra*, at 89–93, there is little research examining the effect of Medicaid. This is because the social costs of job-lock, by definition, relate to the employed population, and thus the effect of Medicaid on job-lock is unlikely to be significant. In any event, concerns about job-lock alone, if any, are not enough to proclaim the Medicaid program a success.

19 Congress's most recent expansion of Medicaid benefits may be an interesting deviation from this pattern. In 1997, Congress passed the State Children's Health Insurance Program (SCHIP) which dedicated $40 billion in federal funding over 10 years to expand coverage for children from low-income households. *See* Balanced Budget Act of 1997, Pub. L. No. 105-33, Title IV, § 4901(a), 111 Stat. 552 (1997) (codified at 42 U.S.C. § 1397 (2000)). SCHIP provides states with considerable latitude in selecting a health insurance policy strategy and allows states to implement policy strategies beyond simply extending insurance coverage. *See infra* notes 272–82 and accompanying text.

Health care differs from other forms of government assistance in that it is better viewed not as a commodity for consumption, but rather as one of many inputs into a health production function. Health care joins exercise, nutrition, health-related behaviors, and certain environmental factors as inputs to a "health stock" which, like education or human capital, individuals accumulate over time and enjoy in subsequent years. Though larger investments of health inputs generally lead to larger health stocks, which in turn translate into longer and more utility-filled lives, each input must be viewed within the context of the complex health production function and cannot be viewed in isolation. Consequently, the impact of an individual health care input depends on other nonmedical, and often behavioral, variables. Health care is thus best viewed as an investment that combines with other inputs to generate future utility, not a commodity that reliably yields current utility.[20]

In viewing health as a function of long-term investments, a behavioral economic approach, in contrast to a traditional analysis that rests on assumptions of rationality, generates fruitful insights. First, empirical observations from the fields of health psychology, social psychology, and public health reveal that many health-related behaviors, including health care-seeking behavior and healthy versus unhealthy behavior, account for much more of the variance in predicting health outcomes than does access to medical care. These health-related behaviors in turn have systematic and robust causal psychosocial factors that vary according to socioeconomic class. Second, many of these same psychosocial variables influence the efficacy of a certain medical intervention, so the marginal impact of certain health care services will vary according to behavioral circumstances. And third, if consuming health care translates primarily into future (and not current) utility, then one's propensity to seek care will depend on one's valuation of future utility, which again invokes multiple behavioral considerations. This tradeoff between current and future utility has received substantial attention from behavioralists and psychologists, and all of these factors play significant roles in determining health outcomes, but they escape the orthodox economic analysis and expose a severe

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20 One important exception is acute care designed not to cure but to alleviate discomfort. Since many uninsured obtain their health services through hospital emergency rooms, much of the care they receive addresses immediate concerns and does not invest in future wellness. This is problematic because, among other reasons, the (quite expensive) care that those uninsured receive does not translate into better health.

To be sure, a majority of medical interventions (including the vast majority of costly interventions) is designed to improve health, and thus increase future utility, rather than to improve one's current condition and increase immediate utility. Some scholars argue that this approach to medicine is wrongheaded. *See, e.g.*, DANIEL CALLAHAN, WHAT KIND OF LIFE 135–41 (1990) (suggesting that medical care should be oriented towards a "biographical" life span, after which intervention would be limited to caring rather than curing).

limitation of a model that assumes maximizing behavior. An understanding of the psychosocial variables that explain and predict health behaviors, and thus good health, could valuably inform health care policy.[21]

This Article proceeds as follows. Part I challenges the conventional presumptions that motivate Medicaid policy, chiefly, that an insurance gap is responsible for health disparities. It reports evidence suggesting that an individual's insurance status is largely a choice variable, and that improving inequalities in insurance status and access to health care is unlikely to end health disparities. Perhaps more significant, disparities in consumption of health care itself—let alone health insurance—may have little effect on health disparities. This relates to a broader and increasingly popular claim that the United States overconsumes health care without enjoying material improvements in health.[22] Thus, a policy geared to improve health by providing health insurance is doubly flawed.

Part II discusses the health production function developed in Michael Grossman's seminal 1972 paper,[23] which was the first effort to treat health care as an input to a health production function. Though no theoretical amendments to the Grossman model are offered here, a review of that paper lays the foundation for a behavioral economic understanding of health care consumption and articulates how such a behavioral approach challenges assumptions about health care consumption.

Part III builds off the Grossman model by identifying causal mechanisms developed in the health economics literature (and reflected in the Grossman model) that articulate how nonmedical inputs can influence health outcomes. It then—in what is the Article's biggest contribution—discusses specific findings from the health psychology literature and identifies specific psychosocial factors that have been shown to influence health. This is a step that has not yet been taken in behavioral economics. Previous work has focused on a now-familiar collection of experimental data that identify behavioral patterns that conflict with economic theory.[24] This Article introduces a

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21 In viewing health disparities as, in part, a consequence of social and behavioral variables, this Article joins a growing literature on social policy that emphasizes social and environmental inequalities in addition to material inequalities. *See, e.g.*, CONSEQUENCES OF GROWING UP POOR (Greg J. Duncan & Jeanne Brooks-Gunn eds., 1997); SUSAN E. MAYER, WHAT MONEY CAN'T BUY: FAMILY INCOME AND CHILDREN'S LIFE CHANCES (1997).

22 *See infra* notes 43–46 and accompanying text. Furthermore, substantial evidence suggests that the efficacy of health care varies largely on psychosocial variables. *See infra* Part III.A.2.

23 Michael Grossman, *On the Concept of Health Capital and the Demand for Health*, 80 J. POL. ECON. 223 (1972).

24 For an overview of current literature in behavioral law and economics, see BEHAVIORAL LAW AND ECONOMICS (Cass R. Sunstein ed., 2000).

new body of empirical findings into behavioral economics by incorporating experimental and survey research that is specific to healthcare-seeking behavior. Future work in behavioral economics, whether researching health care or other policy areas, would benefit from expanding the pool of psychological empirics beyond those commonly found in the current literature.

In highlighting why Medicaid's extension of health insurance is a failed strategy, Part III also introduces a list of Medicaid reforms that follow from the behavioral model. These include: developing community-based health care that encourages trust in providers and offers social support for individuals struggling with health challenges; initiating cultural campaigns to change social norms; revising the delivery of medical services to give patients greater control over their care; and integrating the delivery of preventive care with counseling support to encourage farsighted behavior. While these policy proposals are largely speculative, the overarching theme behind each proposed intervention is that Medicaid policymakers should take behavioralism seriously, and that offering medical care alone is unlikely to benefit a Medicaid population that suffers from multiple sources of poor health. Medicaid benefits should be tailored to the sources of poor health, and supplementing the delivery of medical care with services that appreciate the behavioral context of poor health could significantly improve health outcomes without requiring expensive care.

Part IV then identifies three recently established avenues that permit states to pursue the Medicaid reforms suggested in Part III. The first, and most recent, is the Centers for Medicare and Medicaid Services announcement in 2001 of a liberal approach to granting Section 1115 Medicaid waivers. This initiative grants states significant latitude in developing creative health care programs and gives state executive branches the opportunity to initiate behavioral interventions. The second avenue is the State Children's Health Insurance Program (SCHIP), passed by Congress in 1997, which reflects policymakers' growing inclination toward behavioral interventions. SCHIP's efforts to improve the health of disadvantaged children include the provision of flexible funds for demonstration projects, which can allow and encourage experimentation in behavioral reforms. The third avenue is the Early and Periodic Screening, Diagnosis, and Treatment program (EPSDT), which opens the door for judicial interventions that induce states to play proactive and behavior-sensitive roles in delivering health care. The Article concludes by encouraging policymakers—whether state or federal, whether executive, legislative or judicial—to depart from the prevailing Medicaid policy model and to incorporate behavioralism into health improvement programs.

I
THE POOR, THE SICK, AND THE UNINSURED

The campaign to extend health insurance to America's poor is motivated by three correlations: many of the poor are uninsured,[25] the uninsured struggle with bad health,[26] and the poor struggle with bad health.[27] Policymakers tend to see causality in the second correlation—namely, that insurance status determines health outcomes—and therefore, since the poor cannot afford health insurance, the public provision of health insurance would presumably correct the third correlation. Examining each of these three correlations, however, reveals problems with that policy's underlying logic.

First, for many of the uninsured, it is unlikely that poverty is the reason they do not have health insurance. Many uninsured individuals who are eligible for Medicaid or other forms of public insurance simply fail to enroll. For example, most of the 9.3 million uninsured children in the United States are eligible for government-sponsored health insurance.[28] Similarly, half of California's poor, which by definition are individuals from households with incomes below 200% of the federal poverty level (FPL), are eligible for the state's health insurance programs but do not enroll.[29] Regarding the nonpoor uninsured, recent data from California reveal that 27% of these families earn greater than 300% of the FPL, 60% own personal computers, and 45% own their own homes.[30] These individuals clearly have the

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25 Sixty-six percent of America's non-elderly uninsured come from families earning less than 200% of the federal poverty level (FPL) and 81% come from families earning less than 300% FPL. KAISER COMMISSION ON MEDICAID AND THE UNINSURED, THE HENRY J. KAISER FOUNDATION, HEALTH INSURANCE COVERAGE IN AMERICA, 2003 DATA UPDATE HIGHLIGHTS: CHARTPACK AND TABLES Fig. 4 (2004), *at* http://www.kff.org/uninsured/upload/46814_1.pdf.

26 For a detailed overview of the health disparities between individuals with health insurance and those without, see AMERICAN COLLEGE OF PHYSICIANS, NO HEALTH INSURANCE? IT'S ENOUGH TO MAKE YOU SICK 11–18 (2000), *at* http://www.acponline.org/uninsured/lack-contents.htm. The American College of Physicians and the American Society of Internal Medicine (ACP-ASIM) have also documented the poor health outcomes of America's uninsured women and America's uninsured Latino community. *Id.* at 22–25; AMERICAN COLLEGE OF PHYSICIANS-AMERICAN SOCIETY OF INTERNAL MEDICINE, NO HEALTH INSURANCE? IT'S ENOUGH TO MAKE YOU SICK: LATINO COMMUNITY AT GREAT RISK (2000), *at* http://www.acponline.org/uninsured/lack-contents2.htm. These compilations should be treated with some caution, however, since they were organized specifically to advance the political push towards expanded coverage.

27 *See* Adler et al., *supra* note 12, at 15–16; Smith, *supra* note 12, at 146–49 (1999); *supra* notes 12–14 and accompanying text.

28 GENEVIEVE M. KENNY ET AL., MOST UNINSURED CHILDREN ARE IN FAMILIES SERVED BY GOVERNMENT PROGRAMS (Urban Institute, Assessing the New Federalism Series No. B-4, 1999), *at* http://www.urban.org/url.cfm?ID=309302.

29 Mark Smith, Keynote Presentation I, *in* CALIFORNIA ASSOCIATION OF PUBLIC HOSPITALS AND HEALTH SYSTEMS, THE UNINSURED DEBATE: HEALTH INSURANCE VS. HEALTH CARE ACCESS 3, 6 (2000), *at* http://www.caph.org/publications/uninsured.pdf.

30 *Id.*

resources to make significant purchases in health care, yet they choose to make other expenditures instead. These consumer decisions may be defensible under certain circumstances. Perhaps many of these potential health insurance purchasers are healthy and unlikely to get sick in the short term, or perhaps they know they can rely on charity care. Similarly, perhaps these individuals are experiencing income fluctuations, short-term cash shortages, or uncertain future income, and thus their current income overstates their actual budgets. Such supposition is speculative and requires further examination, but what can safely be said is that they have assets or income that make available the option to purchase some sort of health insurance, and yet they decline that option.[31] For these individuals, insurance status is a choice variable much more than an unavoidable consequence of poverty.

Even if uninsured individuals were offered publicly-sponsored health insurance, there is conflicting evidence that a change in insurance status would lead to improved health outcomes. To be sure, an army of studies document that the uninsured are at greater risk to a host of adverse health outcomes. Uninsured Americans are more likely to suffer from avoidable hospitalizations,[32] to suffer higher rates of hospital-related or clinical mortality,[33] and to experience higher rates of late-stage cancer diagnosis (and subsequently have lower cancer survival rates).[34] However, publicly provided health insurance has

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31 *See id.* ("[There are] people for whom the 'market' should work; they 'should' buy health insurance—and don't . . . . That is to say, their sense of the value of what they can 'afford' says health insurance is not high on their list.").

32 *See* John Billings et al., *Recent Findings on Preventable Hospitalizations*, 15 HEALTH AFF. 239, 239 (1996); Andrew B. Bindman et al., *Preventable Hospitalizations and Access to Care*, 274 JAMA 305, 305 (1995) (finding that increased access to care was inversely related to hospitalization rates for certain chronic conditions); Joel S. Weissman et al., *Rates of Avoidable Hospitalization By Insurance Status in Massachusetts and Maryland*, 268 JAMA 2388, 2388 (1992) (finding that uninsured patients were significantly more likely to be hospitalized for avoidable conditions).

33 *See* Peter Franks et al., *Health Insurance and Mortality: Evidence from a National Cohort*, 270 JAMA 737, 740 (1993) (finding that the effect of lack of insurance on mortality was comparable to the effects of education, income and self-rated health); Jack Hadley et al., *Comparison of Uninsured and Privately Insured Hospital Patients: Conditions on Admission, Resource Use, and Outcome*, 265 JAMA 374, 374 (1991) (finding, *inter alia*, that the uninsured had a 44% to 124% higher risk of in-hospital mortality at the time of admission than did the privately insured); Paul D. Sorlie et al., *Mortality in the Uninsured Compared with That in Persons with Public and Private Health Insurance*, 154 ARCHIVES INTERNAL MED. 2409, 2413 (1994).

34 *See* John Z. Ayanian et al., *The Relation Between Health Insurance Coverage and Clinical Outcomes Among Women with Breast Cancer*, 329 NEW ENG. J. MED. 326, 326 (1993) ("Uninsured patients and those covered by Medicaid presented with more advanced disease than did privately insured patients."); Richard G. Roetzheim et al., *Effects of Health Insurance and Race on Early Detection of Cancer*, 91 J. NAT'L CANCER INST. 1409, 1413 (1999) (persons who were uninsured were significantly more likely to be diagnosed at a late stage of cancer than were patients with private insurance).

been no talisman. Even after Medicaid began covering large populations of the poor, low-income households, on average, have continued to suffer disproportionately bad health.[35]

Part of this persistent health disparity can be attributed to the inadequacy of Medicaid's coverage. Access to care certainly varies by economic status, and many low-income individuals experience logistical difficulty in obtaining care.[36] In addition, many states set reimbursements for Medicaid services far below the rates that providers receive from private insurance or Medicare,[37] and some states limit access to care by imposing burdensome bureaucratic hurdles.[38] Thus, despite a theoretically generous benefits plan, Medicaid often does not reach its intended beneficiaries.

However, there is skepticism that access barriers—whether a natural product of the health care market, a result of Medicaid's poor administration, or intentionally erected by the state—are responsible for the failure of public health insurance to lead to better health outcomes. Though it is plausible that enrollment rates among eligible uninsured—which for some populations are surprisingly low[39]—could

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35 *See* Smith, *supra* note 12, at 148 (noting that while the poor have experienced some health improvements since Medicaid's beginnings in the 1960s, "Medicaid apparently failed to make much of a dent on health disparities by economic status"). For a comprehensive overview of health inequalities from a cross-national perspective, see HEALTH INEQUALITIES: LIFECOURSE APPROACHES (George Davey Smith ed., 2003).

36 The data reflecting disparities in access across economic classes is overwhelming. *See, e.g.*, JOHN HOLAHAN & BRENDA SPILLMAN, HEALTH CARE ACCESS FOR UNINSURED ADULTS: A STRONG SAFETY NET IS NOT THE SAME AS INSURANCE 5-6 (Urban Institute, Assessing the New Federalism, 1998), *available at* http://www.urban.org/UploadedPDF/310414_anf_b42.pdf; *see also* JACK A. MEYER & SHARON SILOW-CARROLL, W.K. KELLOGG FOUNDATION, INCREASING ACCESS: BUILDING WORKING SOLUTIONS 3 (2000) (concluding that a "host of logistic, cultural, and organizational noninsurance barriers to care must be overcome to meet the needs of patients as they try to gain access to the system"), *at* http://www.communityvoices.org/Uploads/1qzxc5fltm3trqh5sqrm145_20020826091522.pdf (last visited Dec. 19, 2004). Studies examining regional variation in health care access for the uninsured suggest that a region's concentration of providers, health expenditures of wealthy patients, and ethnic heterogeneity can affect health care access for the region's uninsured. *See* Peter J. Cunningham & Peter Kemper, *Ability to Obtain Medical Care for the Uninsured*, 280 JAMA 921, 925–26 (1998). Additional evidence suggests that individuals who own automobiles, even when controlling for employment grade, exhibit lower mortality rates. *See* George Davey Smith et al., *Magnitude and Causes of Socioeconomic Differentials in Mortality: Further Evidence from the Whitehall Study*, 44 J. EPIDEMIOLOGY AND COMMUNITY HEALTH 265 (1990). For an overview of indicators of access to health care in the United States, see LEIYU SHI & DOUGLAS A. SINGH, DELIVERING HEALTH CARE IN AMERICA: A SYSTEMS APPROACH 500–01 (1998).

37 *See* John Holahan et al., *The Impact of Medicaid Adoption of the Medicare Fee Schedule*, 14 HEALTH CARE FIN. REV. 11, 11 (1993) ("[L]ow Medicaid fees result in low physician participation in the program and affect the number of Medicaid patients physicians are willing to treat.").

38 *See* JOSEPH WHITE, COMPETING SOLUTIONS: AMERICAN HEALTH CARE PROPOSALS AND INTERNATIONAL EXPERIENCE 38 (1995) ("[S]tates seem to discourage application for the program by requiring potential beneficiaries to complete complex application forms.").

39 *See supra* notes 28–31 and accompanying text.

reflect administrative access barriers, Mark Smith, CEO of California HealthCare Foundation, has a sharp retort for those who make that claim:

> Now, please understand. I understand there are a variety of reasons why people do not sign up for Medi-Cal and Healthy Families. They're afraid of the INS. The form is not in Hmong. They don't understand insurance. The form is too long, too difficult to fill out. They don't like going to the welfare department. . . . And yet, I would argue to you, if there were a million low-income Californians that were eligible for $2,000 a year in cash, how much "outreach" do you think we'd have to do? . . . Are you kidding me? Many of us have struggled our whole lives to pass bills to give the poor what they desperately need. We tend to think that the reason they're not battering down the door is simply that we haven't yelled loud enough or in the right language. This is an illusion.[40]

More fundamentally, many scholars argue that differentials in access to health care are not responsible for the marked inequality in health outcomes, as health disparities have been shown to persist even under conditions of equal access.[41] For example, the famous "Whitehall Studies" observed health differences across class and income among civil servants in England and Wales even though all of the subjects enjoyed equal medical insurance coverage under Britain's National Health Service.[42] In addition, the Rand Health Insurance Experiment (HIE) found that while lower co-payments for health care led to higher utilization of health care services, those increases in utilization did not measurably improve health outcomes, save for the sick poor.[43] These results have led some prominent health researchers to

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40 Smith, *supra* note 29, at 6.

41 *See* Smith, *supra* note 12, at 148 ("[T]here is growing skepticism that differential access to health care is the smoking gun behind the health gradient.").

42 The first Whitehall Study was reported in M.G. Marmot et al., *Social/Economic Status and Disease*, 8 ANN. REV. PUB. HEALTH 111 (1987) [hereinafter *Whitehall I*]. A follow-up study, or "Whitehall II," generated similar results in M.G. Marmot et al., *Health Inequalities Among British Civil Servants: The Whitehall II Study*, 337 LANCET 1387 (1991) [hereinafter *Whitehall II*]. What is remarkable about these findings is that they reveal a linear relationship between health outcomes and social class across all social classes—in other words, a one-level promotion within the British Civil Service translated into a steady and significant improvement in health regardless of where the promotion took place. *See Whitehall I*, *supra*, at 113 tbl. 1; *Whitehall II*, *supra*, at 1389 tbl. 1; *see also* Patricia Cohen, *Forget Lonely. Life is Healthy at the Top*, N.Y. TIMES, May 15, 2004, at B9 ("Whitehall shook the public health establishment. 'Those findings caused me to change my career' said [Nancy] Adler [a leading health psychologist] . . . 'It was so dramatic and so puzzling.'").

For similar findings from British census data, see A. M. Adelstein, *Life-Style in Occupational Cancer*, 6 J. TOXICOLOGY & ENVTL. HEALTH 953 (1980), which found an inverse relation between cancer rates and social class, and MERVYN SUSSER ET AL., SOCIOLOGY IN MEDICINE 236–41 (1985).

43 JOSEPH P. NEWHOUSE, FREE FOR ALL? LESSONS FROM THE RAND HEALTH INSURANCE EXPERIMENT 338–45 (1993) (summarizing the HIE's central findings).

argue that health care actually has only a slight impact on health outcomes. Victor Fuchs, who has made the argument most prominently, notes that public health initiatives, not technological advances in health care, were responsible for health improvements in the United States during the nineteenth and twentieth centuries.[44] He further argues that the marginal benefits from improvements in health care, at least above certain minimum technological levels, are far below those from improvements in individuals' decisions about diet, exercise, and risky behaviors.[45] Other scholars have similarly observed that even though the United States spends more per capita (and more as a percentage of its GDP) on health care than any other industrialized nation, American life expectancy is only average among OECD nations and infant mortality is far above the OECD average.[46] These data suggest that a policy premised merely on providing better access to health care—or access to better (usually more expensive) health care—is misguided, and variables outside health care access are driving health inequalities.

In sum, current Medicaid policy rests on a severely flawed syllogism. Poverty is not necessarily responsible for the growing number of uninsured; extending health insurance does not necessarily induce individuals to enroll in that insurance or to seek medical care that is covered by that insurance; and making medical care widely available does not necessarily translate into improved health. At the very least, this discredits policymakers' presumption that expanding health insurance eligibility will improve health outcomes. More importantly, it discredits the dual presumptions that individuals will consume the health care they require to achieve good health and that the policymakers' responsibility is only to make such care available. This poses a challenge to a traditional, rational-basis understanding of health care consumption because the evidence suggests that variables other than access to, or consumption of, health care have more power in predicting health outcomes. The search for these variables begins with a comprehensive economic model of the demand for health and health care, discussed in the next Part, followed by a survey of behavioral variables that can provide insight into the efficacy of certain health care policies.

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44 VICTOR R. FUCHS, WHO SHALL LIVE? HEALTH, ECONOMICS, AND SOCIAL CHOICE 30–39 (1998).

45 *Id.* at 54–55.

46 *See, e.g.*, HENRY J. AARON, SERIOUS AND UNSTABLE CONDITION: FINANCING AMERICA'S HEALTH CARE 78–92 (1991).

II
THE GROSSMAN MODEL

Michael Grossman's seminal 1972 paper was the first to model the demand for health care within a health production function.[47] While the paper is famous for its formal modeling of health care consumption and has served as the paradigmatic model for many subsequent empirical studies,[48] it also can be used to identify how psychosocial variables influence health outcomes.

Grossman's modeling of health care consumption followed the efforts of his contemporaries at the University of Chicago to model investments in human capital.[49] Human capital models of household production introduced a distinction between "commodities" (alternatively termed "objects of fundamental choice"), which provide consumers with immediate utility upon consumption, and "market goods," which consumers use as inputs to *produce* utility-generating commodities.[50] The consumption of certain market goods, such as education, increases a person's stock of human capital, such as knowledge or marketable skills, that later leads to higher productivity (and thus a higher income).[51] While some earlier publications modeled an individual's health to be one component of the stock of human capital,[52] the Grossman paper was the first to model a unique demand function for heath capital.

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47 *See* Grossman, *supra* note 23, at 224; *see also* MICHAEL GROSSMAN, THE DEMAND FOR HEALTH: A THEORETICAL AND EMPIRICAL INVESTIGATION (1972); Smith, *supra* note 12, and accompanying text. For an overview of the impact of Grossman's 1972 paper, see Michael Grossman, *The Human Capital Model, in* HANDBOOK OF HEALTH ECONOMICS 349–51 (Anthony J. Culyer & Joseph P. Newhouse eds., 2000) [hereinafter Grossman, *Human Capital*].

48 *See* Smith, *supra* note 12, at 148. For empirical support for the Grossman model using cross-sectional data, see, e.g., Manfred Erbsland et al., *Health, Health Care, and the Environment: Econometric Evidence from German Micro Data*, 4 HEALTH ECON. 169 (1995); Thomas Stratmann, *What Do Medical Services Buy? Effects of Doctor Visits on Work Day Loss*, 25 E. ECON. J. 1 (1999); Adam Wagstaff, *The Demand for Health: Some New Empirical Evidence*, 5 J. HEALTH ECON. 195 (1986). For empirical support using longitudinal data, see, e.g., EDDY K.A. VAN DOORSLAER, HEALTH, KNOWLEDGE, AND THE DEMAND FOR MEDICAL CARE (Van Gorcum 1987); Adam Wagstaff, *The Demand for Health: An Empirical Reformulation of the Grossman Model*, 2 HEALTH ECON. 189 (1993).

49 *See* Gary S. Becker, *A Theory of Allocation of Time*, 75 ECON. J. 493 (1965); Kelvin J. Lancaster, *A New Approach to Consumer Theory*, 74 J. POL. ECON. 132 (1966); Robert T. Michael & Gary S. Becker, *On the New Theory of Consumer Behavior*, 75 SWEDISH J. ECON. 378 (1973).

50 *See* Lancaster, *supra* note 49, at 132–33.

51 *See, e.g.*, GARY S. BECKER, HUMAN CAPITAL 11–13 (1993); GARY S. BECKER, HUMAN CAPITAL AND THE PERSONAL DISTRIBUTION OF INCOME: AN ANALYTICAL APPROACH 37–39 (1967); JACOB MINCER, SCHOOLING, EXPERIENCE, AND EARNINGS 129–32 (1974); Yoram Ben-Porath, *The Production of Human Capital and the Life Cycle of Earnings*, 75 J. POL. ECON. 352, 352 (1967).

52 *See* Victor R. Fuchs, *The Contribution of Health Services to the American Economy*, 44 MILBANK MEMORIAL FUND Q. 65 (1966); Sandra J. Mushkin, *Health as Investment*, 70 J. POL.

The Grossman model begins with the basic premise that an individual is happier when she is healthy—i.e., health translates into utility. This health-related happiness is a function of a health stock that an individual builds over time with appropriate health investments.[53] Formally, an individual's intertemporal utility is characterized by:

$$U = \Sigma_t[\eta^t U_t(h_t, Z_t)] \quad t = 0, 1, \ldots, n$$

where Z_t is consumption of standard commodities, h_t represents the number of healthy hours in period t, and η $(0 < \eta < 1)$ discounts future utilities. The model further defines $h_t = \Phi_t H_t$ where H_t is the "stock of health" at period t and Φ_t is an exogenous (positive) parameter that defines the relationship between an individual's health stock and the number of healthy hours (and subsequent utility) she enjoys.

The most interesting feature of Grossman's model, and the most useful for the purposes of this Article, is his characterization of an individual's health stock:

$$H_{t+1} - H_t = I_t - \delta_t H_t$$

where δ_t $(0 < \delta_t < 1)$ is the depreciation rate of the health stock and I_t is the gross investment in the health stock during period t. I_t is defined by $I_t = I_t(M_t;E)$ where M_t is a vector of inputs that contribute to gross investment in health, such as health care, exercise, and other inputs that require either time or financial resources.[54] E is the consumer's stock of knowledge, or human capital exclusive of health capital, and its inclusion in the health investment equation reflects Grossman's assumption that knowledge capital raises the efficiency of the production process of human capital, similar to how technology improvements increase production efficiency in the market sector.[55] So Grossman's model posits that an individual's health is a function of her genetic make-up (included in the rate of health depreciation, δ_t, and the initial health stock of H_0), her independent decisions regard-

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ECON. 129, 136 (1962). The problem with these models, as Grossman observes, is that they fail to treat an individual's health capital differently from any other type of human capital. Grossman, *supra* note 23, at 224. The Grossman model illustrates, however, that health capital has certain unique attributes (including depreciation, which has implications for an individual's length of life, and thus expected utility), and thus deserves a different model. *Id.*

53 This is a simplified version of the original Grossman model. *Cf.* Grossman, *supra* note 23, at 225. Grossman also includes a time-budget constraint where an individual's time is an input in creating both her health stock and the other commodities she consumes. *Id.* at 226–27. The healthier an individual, the less time she loses to sickness, and correspondingly, the more time she can dedicate to productive, consumption-creating activities. Therefore, an individual's health also *indirectly* influences her utility because a healthier individual can spend more time earning wages and creating other commodities for consumption. *See id.* at 227.

54 *See* Grossman, *supra* note 23, at 226.

55 This is an assumption that was common to household capital models. *See* Robert T. Michael, *Education in Nonmarket Production*, 81 J. POL. ECON. 306, 307 (1973); Michael & Becker, *supra* note 49, at 381.

ing resource allocation (reflected in the assets she chooses to expend on M_i health investments and E investments in education), and certain environmental factors (also captured in E).[56]

Since its introduction in 1972, Grossman's model has been cited widely and has enjoyed robust empirical support.[57] It has been labeled "the standard economic model of health,"[58] and it illustrates a comprehensive approach towards the production of health, where

> health is a stock where current inputs and chosen behaviors are investments producing increments to that stock. If these increments are affected by current choices, solving sequentially, today's health stock will be a function of the entire history of all current and past prices, incomes, health behaviors, and initial health endowments.[59]

Accordingly, the model introduces an army of variables that cause good health, and only one of those variables is consumption of health care.

Within the complete set of health-improving variables, this Article focuses on the variables that relate to an individual's social environment and behavior—factors that are left out of traditional economics. The Grossman model invites the incorporation of these psychosocial factors in two important ways. First, the model states that the efficiency with which individuals consume inputs of health care varies according to certain personal characteristics. Grossman states that an individual's education capital influences her marginal productivity from a given health-related input, but this could be viewed more widely as a door through which other psychosocial variables can enter. The model allows a broad interpretation of the variable E to include other personal characteristics that affect health outcomes. From this perspective, E can represent a vector of different personal and environmental variables, not just the simple metric reflecting formal education. Some variables in E may be complements to health care that influence the marginal productivity of a certain health care input, and some may represent the inclination to consume more efficient health inputs that serve as substitutes for health care. Though Grossman may have only intended to follow the popular human capital models, his inclusion of the E variable is a significant innovation in understanding the role of behavioral factors in shaping health outcomes.[60]

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56 The variable for education, E, is considered here as both an investment and an environmental factor because the causal mechanism from education to health is not known (or, more precisely, the causality is likely to have multiple paths). The relationship between health and education is discussed in detail in Part III, *infra*.

57 *See supra* note 48.

58 Smith, *supra* note 12, at 148.

59 *Id.* at 149.

60 While several human capital models assumed that education increased the productive efficiency of other inputs, *see* Michael, *supra* note 55, at 306; Michael & Becker, *supra*

The incorporation of additional psychosocial variables into the formal model—which is undertaken in Part III—is a paradigmatic application of behavioral economics.

Another useful feature of the Grossman model is the relationship it establishes between health-related investment decisions and the discounting of future utilities in an intertemporal utility function. When an individual makes investments in her health stock, which will subsequently lead to greater utility in future periods, she must expend time and resources in the current period and endure a reduced current utility. Essentially, investing in one's health stock is trading current utility for future utility, so an individual's health decisions will correspond to the degree to which she discounts future utility and the manner in which she makes investment decisions over time. Even though Grossman does not explicitly incorporate behavioral variables into this element of the model, the relationship between the present and the future invites an appeal to scholarship that identifies psychosocial factors that shape investment decisions.

These two features of the Grossman model—the E variable and the centrality of making investment decisions over time—will be the focus for the remainder of this Article. As the following Part illustrates, Grossman's inclusion of education in the health production function finds robust empirical support, but his model is more significant in its allowance for other psychosocial variables, particularly those that further explain *how* education could seem to affect health. In this way, the Grossman model will serve as a useful vehicle to understand how other personal and social factors can influence health outcomes and thus inform social policy.

III
INCORPORATING PSYCHOSOCIAL VARIABLES

Previous attempts to incorporate behavioral economic variables into an analysis of health care policy have been limited to applying certain economic anomalies[61] that can be applied widely beyond health care issues. One noteworthy example is Russell Korobkin's use of behavioral mechanisms—such as bounded rationality, overoptimism, and loss aversion—in arguing for greater patient protection laws

note 49, at 393, education's specific application towards health production is significant. Perhaps Grossman does not deserve credit for being the first to identify the importance of noneconomic variables in consumer behavior, but he deserves credit for advancing the important, yet perhaps less bold, argument that these behavioral variables contribute to the demand for health and health care. This idea is the antecedent for this Article.

61 For a useful survey of these anomalies and their implications for legal rules, see Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471, 1548–50 (1998).

in managed care systems.[62] Severely lacking, however, are examinations that apply health-specific behavioral variables that health psychologists and public health scholars have shown to significantly affect health outcomes.[63] These factors could be important in explaining health behaviors that deviate from orthodox economic predictions in general, and health disparities between the wealthy and poor in particular. Consequently, an examination of these psychosocial factors could inform Medicaid policy's strategy to improve the health of the poor.

The starting point is Grossman's inclusion of education in the health production model. A large number of studies illustrate that, consistent with the Grossman formulation, "years of formal schooling completed" is the most important correlate of good health and is an even more powerful predictor than occupation and income.[64] Health may also have a causal influence on the duration of a person's schooling,[65] and there likely are confounding third variables that systematically affect both education and health (a topic discussed in the next

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62 Russell Korobkin, *The Efficiency of Managed Care "Patient Protection" Laws: Incomplete Contracts, Bounded Rationality, and Market Failure*, 85 CORNELL L. REV. 1, 44–62 (1999); *see also* William M. Sage, *Regulating Through Information: Disclosure Laws and American Health Care*, 99 COLUM. L. REV. 1701, 1710–11 (1999) (critiquing rationales for the promotion of mandatory disclosure laws in health care).

63 A related literature in economics includes some attempts to explain presumptively irrational conduct, such as addictive behavior, within rational utility-maximizing models. *See, e.g.*, Gary S. Becker & Kevin M. Murphy, *A Theory of Rational Addiction*, 96 J. POL. ECON. 675, 694–95 (1988) (explaining how unhealthy behaviors, such as smoking and other additive habits, can be utility maximizing within an intertemporal utility function and thus consistent with the rational actor model). Psychologists have pursued similar efforts to model addictive behavior, though with methodologies less committed to the rational actor model. *See, e.g.*, George Lowenstein, *A Visceral Account of Addiction*, *in* SMOKING: RISK PERCEPTION, & POLICY (Paul Slovic ed., 2001). But academic efforts that use psychosocial data to inform, and perhaps radically alter, the rational actor model are virtually nonexistent. *See, e.g.*, RICHARD G. FRANK, BEHAVIORAL ECONOMICS AND HEALTH ECONOMICS (NBER Working Paper 10881, 2004) ("[T]he application of behavioral economics to issues in health economics have been largely confined to understanding addictive behavior around cigarettes, drugs, and alcohol."), *at* http://papers.nber.org/papers/w10881.pdf.

64 *See* Richard Auster et al., *The Production of Health, an Exploratory Study*, 4 J. HUM. RESOURCES 411, 430–32 & tbls. 1, 3–7 (1969); Joseph Newhouse & Lindy Friedlander, *The Relationship Between Medical Resources and Measures of Health: Some Additional Evidence*, 15 J. HUM. RESOURCES 200, 210, 214 (1980); Pappas et al., *supra* note 14, at 105–06; Morris Silver, *An Econometric Analysis of Spatial Variations in Mortality Rates By Race and Sex*, *in* ESSAYS IN THE ECONOMICS OF HEALTH AND MEDICAL CARE 161 & tbl. 9-1 (Victor R. Fuchs ed., 1972); *see also* empirical studies cited *supra* note 48.

For a survey of the literature on education and health, see Michael Grossman & Robert Kaestner, *Effects of Education on Health*, *in* THE SOCIAL BENEFITS OF EDUCATION 67 (Jere R. Behrman & Nevzer Stacey eds., 1997).

65 *See* Janet Currie & Rosemary Hyson, *Is the Impact of Health Shocks Cushioned By Socioeconomic Status? The Case of Low Birth Weight*, 89 AMER. ECON. REV. 245, 245 (1999) (suggesting that poor health results in less education); Timothy J. Perri, *Health Status and Schooling Decisions of Young Men*, 3 ECON. EDUC. REV. 207, 207 (1984) (same).

subsection on time preferences).[66] But the majority view—which is not mutually exclusive from the other mechanisms—is that formal education has a discernable causal impact on health.[67]

One may be content to end the examination there. It is possible to conclude from these empirical findings that increasing public outlays in education could serve as an alternative strategy to improve health. By some calculations, investments in schooling have an even higher rate of return on health than expenditures in medical care.[68] But that should only whet our appetites for a comprehensive behavioral understanding of health outcomes. The strong and well-documented relationship between education and health suggests a role for psychosocial factors in predicting health outcomes and can serve as an analytical foundation for other psychosocial factors that have been less studied. The health economics literature has made valuable progress in proposing specific mechanisms through which the causality from education to health operates, and it is useful to harness these mechanisms to understand the role of other behavioral variables.

A review of the literature suggests four different causal mechanisms through which education improves health.[69] Two mechanisms, allocative efficiency and productive efficiency, are captured by the *E* variable in the Grossman model, and two, an exogenous third variable and an endogenous time preference, build on the model's intertemporal utility function. Though these mechanisms can easily be (and are quite likely to be) interrelated, and though they are sometimes empirically indistinguishable, they each posit separate pathways and are thus discussed individually. The remainder of this Part discusses each mechanism in turn and looks to the fields of social psychology, health psychology, and public health to further explicate how psychosocial variables influence health.

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66 *See, e.g.*, Victor R. Fuchs, *Time Preference and Health: An Exploratory Study*, *in* ECONOMIC ASPECTS OF HEALTH 93 (Victor R. Fuchs ed., 1982); Phillip Farrell & Victor R. Fuchs, *Schooling and Health: The Cigarette Connection*, 1 J. HEALTH ECON. 217 (1982).

67 This direction of causality is supported through a creative use of instrumental variables in Adriana Lleras-Muney, *The Relationship Between Education and Adult Mortality in the United States*, 72 REV. ECON. STUDS. 189, 189–92 (2005). A similar and thorough, though less sophisticated, case for causality in the same direction is made in Michael Grossman, *The Correlation Between Health and Schooling*, *in* HOUSEHOLD PRODUCTION AND CONSUMPTION 147 (Nestor E. Terleckyj ed., 1975). *See also* Grossman & Kaestner, *supra* note 64, at 74–75 (1997) (reaching the same conclusion).

68 *See* Auster et al., *supra* note 64, at 434 (finding that the elasticity of mortality rates with respect to education is twice that of medical expenditures and suggesting that investments in education might therefore be more cost-effective than medical care in improving health outcomes). *But see* Jere R. Behrman, *Conceptual and Measurement Issues*, *in* THE SOCIAL BENEFITS OF EDUCATION (Jere R. Behrman & Nevzer Stacey eds., 1997) (suggesting that education's causal effect on health outcomes is, by itself, insufficient to justify government intervention).

69 *See* Grossman, *Human Capital*, *supra* note 47, at 395–96.

A. The E Variable: Factors that Complement Investments in Health

Recall that the Grossman model stipulates that an individual gains utility from a depreciating stock of health while making periodic investments in health, defined by $I_t = I_t(M_t;E)$. M_t represents the vector of health inputs, all of which require the expenditure of resources and are subject to a budget constraint, and E denotes knowledge capital that acts to increase the marginal productivity of the M_t inputs. The inclusion of E in the investment equation suggests that psychosocial factors play a role in how individuals derive benefits from limited health care resources, and the literature offers two mechanisms, allocative efficiency and productive efficiency, that characterize how elements of human capital translate into better health outcomes. While both mechanisms capture a robust relationship between education (specifically) and other psychosocial factors (more generally) with health outcomes, each one offers different lessons regarding health policy. Allocative efficiency pertains chiefly to behaviors that can affect health, such as smoking, diet, exercise, healthcare-seeking behavior, and risky activities, whereas productive efficiency applies to factors that improve the effectiveness of medical care. Factors that improve the former serve as preventive and preemptive health care, whereas factors that improve the latter enhance the actual delivery of health care. Both literatures suggest Medicaid policy recommendations.

1. *Allocative Efficiency*

The most intuitive pathway from higher levels of education to better health outcomes is put forward by the allocative efficiency hypothesis. This proposition suggests that more educated individuals allocate their resources more efficiently, and thus select more marginally productive health inputs than less educated individuals.[70] The core of this hypothesis is driven by the acquisition and retention

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70 The allocative efficiency hypothesis is often indistinguishable from the "tastes hypothesis," a third mechanism in which schooling can improve health. The taste hypothesis argues that "education changes tastes or preferences in a manner that favors health relative to certain other commodities." Grossman & Kaestner, *supra* note 64, at 74.

Both the taste hypothesis and the allocative efficiency hypothesis predict that education changes health behaviors and the selection of health inputs, so most empirical data fails to separate the two. Only in a situation in which new knowledge concerning health becomes available (for example, the harmful effects of chewing tobacco) will the hypotheses have different predictions; in such an instance, the allocative efficiency bypothesis predicts a more rapid bebavioral response by the educated. (The stimulation of a taste for health should not be confused with a stimulation of a taste for information, which would include useful information about health; the latter mechanism would be totally indistinguishable from the process associated with the allocative efficiency hypothesis). For these reasons, the tastes hypothesis does not receive separate treatment in this discussion.

of information. Individuals with more years of formal education are better informed about the health consequences of certain behaviors and thus are in the position to allocate their time and resources to cost-effective health inputs.[71]

Evidence for the allocative efficiency hypothesis is robust, as many studies indicate that higher levels of education lead individuals to pursue healthy behaviors, such as improvements in diet[72] and regular exercise,[73] and to avoid unhealthy behaviors, sucb as smoking and alcohol consumption.[74] In addition, there is empirical support for the proposed mechanism—that the acquisition and retention of health information leads to improved health behaviors. In a study of approximately 1,300 Brazilian children, for example, researchers examined the impact of a mother's schooling on her child's standardized height, controlling for geography and parental height. They found that a mother's schooling does not have a significant independent effect beyond what is statistically explained by the amount of information that she receives, as measured by whether she reads newspapers, watches television, and listens to the radio.[75] They concluded that the avenues to collect information (and thus the amount

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71 Similar studies illustrate that a mother's schooling significantly contributes to the health of her children and infants. *See* Grossman & Kaestner, *supra* note 64, at 99–103 (surveying studies of the impact of a mother's schooling on infant health).

72 *See* Jere R. Behrman & Barbara L. Wolfe, *More Evidence on Nutrition Demand: Income Seems Overrated and Women's Schooling Underemphacized*, 14 J. DEV. ECON. 105, 124–27 (1984); Shirley A. Gerrior, *Dietary Changes in Older Americans from 1977–1996: Implications for Dietary Quality*, 12 FAM. ECON. & NUTRITION REV. 3 (1999); Pauline M. Ippolito & Alan D. Mathios, *Information, Advertising and Health Choices: A Study of the Cereal Market*, 21 RAND J. ECON. 459, 478–79 (1990); Barbara L. Wolfe & Jere R. Behrman, *Is Income Overrated in Determining Adequate Nutrition?*, 31 ECON. DEV. & CULTURAL CHANGE 525, 543–44 (1983).

73 *See, e.g.*, Donald S. Kenkel, *Health Behavior, Health Knowledge, and Schooling*, 99 J. POL. ECON. 287, 288–89 (1991). Kenkel's findings also support an alternative mechanism, where education has an effect on time preferences. *See infra* Part III.B.2.

74 *See* Kenkel, *supra* note 73, at 288–89 (finding that education reduces alcohol consumption); J. Paul Leigh, *Schooling and Seatbelt Use*, 57 S. ECON. J. 195, 206 (1990) (finding that schooling increases seathelt use); William Sander, *Schooling and Quitting Smoking*, 77 REV. ECON. & STAT. 191, 192 (1995) (finding that schooling increases the probability of quitting smoking); William Sander, *Schooling and Smoking*, 14 ECON. EDUC. REV. 23, 32–33 (1995) (finding that schooling reduces the probability of smoking).

75 Duncan Thomas et al., *How Does Mother's Education Affect Child Height?*, 26 J. HUMAN RESOURCES 183, 208–09 (1991); *see also* Pauline M. Ippolito & Alan D. Mathios, *Information, Advertising and Health Choices: A Study of the Cereal Market*, 21 RAND J. ECON. 459, 472, 476 (1990) (concluding that the acquisition of relevant health information affects the consumption of fiber-rich cereals, while formal education is "statisucally insignificant"); Sora Kim & Robin A. Douthitt, *The Role of Dietary Information in Women's Whole Milk and Low-Fat Milk Intakes*, 28 INT'L J. CONSUMER STUD. 245 (2004) (finding that dietary information significantly contributes to greater consumption of low-fat milk, while education has little statistical effect); Pauline M. Ippolito & Alan D. Mathios, *Information and Advertising Policy: A Study of Fat and Cholesterol Consumption in the United States, 1977–1990*, BUR. OF ECON. STAFF REPT., FED. TRADE COMM. (1996) (finding that informational campaigns improve individual diet decisions similarly across all education levels). *But cf.* Qingbin Wang et al., *Impact of Cholesterol Information on U.S. Egg Consumption: Evidence from Consumer Survey Data*, 3

of information received), not an embedded skill or quality acquired from the education process, are responsible for health improvements.[76]

There is significant skepticism, however, over whether the acquisition of information deserves credit for generating certain health improvements. Donald Kenkel, representing that skeptical viewpoint, would argue that the likelihood that a Brazilian woman acquires information through those media is endogenous, and thus is a function, not just a source, of her formal education.[77] Kenkel examined data from the 1985 National Health Interview Survey and used direct measures of health knowledge[78] to estimate the effect of that knowledge on smoking, excessive alcohol consumption, and exercise. Controlling for demographic variables, he found that increases in formal education correlated with lower smoking rates, reduced heavy drinking, and increased exercise.[79] He then separated the effect of formal education from that of specific health information and found that controlling for formal education, an increase in an individual's knowledge of the benefits and harm of a certain behavior leads to a statistically significant improvement in that behavior.[80] This result comports with the findings from the Brazilian health study, that health information has a statistically significant impact on health even controlling for formal education.[81]

Kenkel's most dramatic finding, however, was that even when controlling for health information, formal schooling has an independent and significantly positive effect on health. Moreover, when he compared the relative contributions of information versus formal schooling, the specific-knowledge coefficients were consistently smaller than those for formal schooling.[82] In fact, including the health knowledge variables in the overall regression reduced the size

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APPLIED ECON. LETTERS 189 (1996) (finding that both formal education and cholesterol dietary information significantly affects egg consumption).

76 Thomas et al., *supra* note 75, at 208–09. Social psychologists argue that the dissemination of valuable information is one reason social support networks have proven to contribute to better health outcomes. *See infra* notes 148–49 and accompanying text.

77 *See* Kenkel, *supra* note 73, at 299–300 (measuring the independent impacts of both specific health knowledge and formal schooling on health behaviors).

78 *Id.* at 288, 291. Kenkel measures health knowledge through three health behaviors. *Id.* at 291. Cigarette knowledge is measured by the number of correct responses to whether smoking causes each of seven illnesses. *Id.* Drinking knowledge is measured by the number of correct responses to whether heavy drinking causes each of three illnesses. *Id.* Exercise knowledge is given by responses correctly identifying the amount of exercise required to change one's heart rate and breathing. *Id.*

79 *Id.* at 302–03.

80 *Id.*; Kenkel, *supra* note 73, at 302–03.

81 Thomas et al., *supra* note 75, at 208–09.

82 Kenkel, *supra* note 73, at 297.

of the schooling coefficient by only 5–20%.[83] Thus, while specific health information does lead to certain improvements in health behavior, formal schooling plays a broader role in influencing health outcomes.[84] The mechanism that converts schooling into improved health involves more than a simple dissemination of useful information.[85]

The interesting feature in the debate over the allocative efficiency hypothesis is its effort to render more precise the popular metric "years of formal education," and thus to articulate a specific mechanism for how education improves health.[86] While this debate is fruitful, and while researchers have usefully examined the impact of both formal education and of specific pieces of and pathways for information,[87] scholars have not fully confronted the more elemental problem that the allocative efficiency hypothesis suffers from the restrictive assumptions of orthodox economics. It rests on the broad assumption that individuals optimize an objective function subject to a budget constraint and incomplete information, and as an individual becomes better informed, she will re-optimize her objective function subject to

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83 *Id.*

84 *See id.* at 297, 302–03.

85 There is a similar debate over whether education improves health by facilitating the retention and absorption of valuable health information. A study of fiber consumption following the 1979 U.S. Surgeon General's recommendation to eat fiber to reduce the threat of colon cancer and the subsequent 1984 advertising campaign by the Kellogg Company and the National Cancer Institute found that years of formal schooling had a significant positive effect on fiber intake from cereal, whereas household income had virtually no effect. *See* Ippolito & Mathios, *supra* note 72, at 475–78. The study concluded that education improves individuals' capacities to absorb and retain accurate health information, which then led to improved health behaviors. *Id.* Data from the 1990 National Health Interview Survey, which showed that "the more educated were more likely to have heard AIDS called HIV and were more likely to have heard of radon," also supports this conclusion. *See* Grossman & Kaestner, *supra* note 64, at 83–84.

Explaining the behavior of smokers is slightly more difficult. As Grossman and Kaestner write:

> In response to the first Surgeon General's Report on Smoking and Health in 1964, smoking participation rates of more educated consumers declined rapidly in the late 1960s and early 1970s. In this period, educated consumers were more likely to quit smoking and less likely to begin than less-educated consumers were. These data imply differential ability to process new information as a function of education and possibly some government action. But it is still true today after 30 years of providing information that the more educated are less likely to smoke than the less educated are, despite the massive antismoking campaigns mounted by federal and state governments.

Grossman & Kaestner, *supra* note 64, at 106. However, another study found that both smokers and nonsmokers, due in part to the government's anti-smoking campaign, overestimate, rather than underestimate, the risks of smoking. *See* W. KIP VISCUSI, SMOKING: MAKING THE RISKY DECISION 83 (1992). This suggests that educated individuals are not synthesizing health information accurately when they decide to avoid smoking.

86 *See, e.g.*, Kenkel, *supra* note 73, at 288–89.

87 *See id.*; *see also supra* note 75.

the new constraints. As the above discussion illustrates, however, this approach has significant difficulty explaining recurring unhealthy behaviors such as smoking and heavy drinking, suggesting that it may not accurately reflect human behavior.[88] The efforts to advance a more precise understanding of the role of information are laudable, but they need to operate within more realistic depictions of human behavior.

This traditional economic approach could benefit from incorporating social psychological theory that attempts to model the decision-making process underlying health behaviors. One useful theory is the Theory of Reasoned Action (TRA),[89] which posits that an individual's self-reported intention to perform a certain behavior, which intuitively predicts her actual behavior, is a function of a weighted average of her attitude towards that behavior and the attitudes and subjective norms of her social group.[90] It is the model's inclusion of subjective social norms that marks its departure from the orthodox model. An individual's personal attitude toward a behavior reflects "beliefs concerning the probability of specific consequences following the behavior and favorable or unfavorable evaluation of those consequences,"[91] and this captures the individual's health information, knowledge, and any other considerations that are relevant to individualized optimizing behavior. But the TRA's inclusion of subjective social norms emphasizes that environmental, and perhaps irrational, factors also play important roles in shaping health behavior.[92]

In addition to providing a more sophisticated account of individual health behaviors, the TRA also helps explain the relationship between education and health outcomes. For example, adding social group norms to the predictive function offers a new causal pathway for explaining how education shapes health outcomes. Since education clearly has a role in shaping one's social circle (peer groups tend to consist of individuals with similar educational backgrounds), education has both a direct effect on the individual and an indirect effect

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88 *But see* Becker & Murphy, *supra* note 63.

89 ICEK AJZEN & MARTIN FISHBEIN, UNDERSTANDING ATTITUDES AND PREDICTING SOCIAL BEHAVIOR 5–9 (1980).

90 *Id.* The model is depicted formally by:

$$B \sim BI = w_1 * A_B + w_2 * SN_B$$

where B is overt behavior, BI is behavioral intention, A_B is the attitude toward performing the behavior, SN_B is the subjective norms regarding the behavior, and w_1 and w_2 are the empirically determined weights reflecting the relative importance of the personal and subjective attitudes. *See also* Nola J. Pender & Albert R. Pender, *Attitudes, Subjective Norms, and Intentions to Engage in Health Behaviors*, 35 NURSING RES. 15, 18 (1986) (concluding that "social support expressed verbally or through family or group fitness activities may be conducive to continued, regular attempts to sustain exercise adherence than unsupported individual attempts").

91 Pender & Pender, *supra* note 90, at 15.

92 *See* AJZEN & FISHBEIN, *supra* note 89, at 57–58.

through the individual's peer group. One interesting illustration arises from a study by Grossman in 1975, which was one of the first large-scale empirical studies demonstrating the causality of formal schooling on health.[93] Using instrumental variables, Grossman found that the formal schooling of one's spouse captures nearly as much of the variance of the individual's health that the individual's own schooling explains.[94] This is consistent with the underlying notion of the TRA—that close peers and romantic partners will shape health behaviors.[95]

If health behaviors were primarily shaped by information, as the literal version of the allocative efficiency hypothesis suggests, then the obvious policy response would be to initiate vast public information campaigns and educational programs that familiarize individuals with the health consequences of their behaviors.[96] Such an approach is not without value, as evidenced by the success of several health education campaigns.[97] The allocative efficiency approach fails, however, to account for the persistent unhealthy behavior of those individuals who cannot claim they lack information about the harmful effects of their actions.[98] For predicting unhealthy behaviors that continue despite targeted public campaigns, the TRA has proven to be more accurate. Researchers, for example, have used the TRA to predict family

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93 *See* Grossman, *supra* note 67.

94 *Id.* at 180–81, 203–05.

95 *See* AJZEN & FISHBEIN, *supra* note 89, at 57.

96 A slight variation of the allocative efficiency hypothesis argues that education improves health by enhancing the ability to retain and process information, rather than the ability simply to acquire it. Unfortunately, this alternative mechanism is empirically indistinguishable from the standard hypothesis and reveals a real difficulty with the allocative efficiency hypothesis. Because the hypothesis does not distinguish between whether education acts directly by providing individuals with health information or indirectly by increasing individual retention capacity, the hypothesis's value remains limited. Nonetheless, even according to the alternative version, public information campaigns would be a logical policy response, though the campaign may need simplification and repetition to accommodate varying retention capacities.

97 *See, e.g.*, Ippolito & Mathios, *supra* note 72, at 459 (analyzing a successful nutrition campaign); Daniel P. Moynihan, *Epidemic on the Highways*, THE REPORTER, Apr. 30, 1959, at 16 (initiating the movement for changes to automobile safety mechanisms, including the addition of seatbelts); *infra* note 197 and accompanying text (discussing information campaigns targeting Hispanic comunities). *But see* Malcolm Gladwell, *Wrong Turn: How the Fight to Make America's Highways Safer Went Offcourse*, NEW YORKER, June 11, 2001, at 50 (discussing seatbelt campaigns' mixed success in reducing crash-related injuries). Anti-smoking campaigns have also enjoyed success. *See* U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, THE HEALTH CONSEQUENCES OF SMOKING: A REPORT OF THE SURGEON GENERAL 897 (2004) (touting the "tremendous progress" of anti-smoking campaigns since the first Surgeon General's report on smoking in 1964), *available at* http://www.cdc.gov/tobacco/sgr/sgr_2004/chapters.htm.

98 *See, e.g.*, Grossman & Kaestner, *supra* note 64, at 106 (noting the continued failure of informed individuals to quit smoking); *cf.* VISCUSI, *supra* note 85; Becker & Murphy, *supra* note 63, at 694–95.

planning decisions,[99] condom use,[100] weight loss action,[101] and attitudes toward seeking professional psychological care.[102]

Unfortunately, TRA-explained problems do not lend themselves to easy policy solutions. The TRA implies that standard health education programs would find limited success in changing health behaviors because shaping an individual's personal attitudes toward or knowledge of health behaviors comprises only half the equation. Successful interventions will also have to influence the social norms of an individual's peer group, which is a much tougher challenge.[103] Nevertheless, some researchers suggest that group-based interventions can influence both individual and group attitudes. Uomoto and Gorsuch, for example, argue that mental health education programs in Japanese-American communities could increase both personal awareness and social norms in support of mental health service utilization.[104] Other strategies include campaigns that target peer pressures rather than emphasize the dissemination of information, or perhaps campaigns that use community leaders to model certain health-promoting behaviors.[105]

A separate line of scholarship in the law-and-norms literature discusses the possibility of influencing social norms to change individual

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99 *See, e.g.*, Andrew R. Davidson & James J. Jaccard, *Population Psychology: A New Look at an Old Problem*, 31 J. PERSONALITY AND SOC. PSYCHOL. 1073, 1080–82 (1975); Fishbein et al., *Predicting and Understanding Family Planning Behaviors: Beliefs, Attitudes and Intentions*, *in* AJZEN & FISHBEIN, *supra* note 89, at 130, 138–47; James J. Jaccard & Andrew R. Davidson, *Toward an Understanding of Family Planning Behaviors: An Initial Investigation*, 2 J. APPLIED SOC. PSYCHOL. 228, 234 (1972).

100 *See, e.g.*, Dolores Albarracin et al., *Theories of Reasoned Action and Planned Behavior as Models of Condom Use: A Meta-Analysis*, 127 PSYCHOL. BULL. 142, 155–57 (2001).

101 *See, e.g.*, Eleanor Buckman Saltzer, *Locus of Control and the Intention to Lose Weight*, 6 HEALTH EDUC. MONOGRAPHS 118, 125–26 (1978); Dorothy Sejwacz et al., *Predicting and Understanding Weight Loss: Intentions, Behaviors and Outcomes*, *in* AJZEN & FISHBEIN, *supra* note 89, at 101, 107–12.

102 *See, e.g.*, Jordana K. Baker & Marilyn Y. Peay, *Predicting Intentions to Seek Help from Professional Mental Health Services*, 31 AUSTL. & N.Z. J. PSYCHIATRY 504, 510–11 (1997); Richard P. Halgin et al., *Relation of Depression and Help-Seeking History to Attitudes Toward Seeking Professional Psychological Help*, 34 J. COUNSELING PSYCHOL. 177, 181–84 (1987).

103 The relative weights in the TRA model vary across different behaviors, which suggests that some behaviors would be receptive to information campaigns that merely educate individuals, whereas other behaviors are more a function of social norms.

104 Jay M. Uomoto & Richard L. Gorsuch, *Japanese American Response to Psychological Disorder: Referral Patterns, Attitudes, and Subjective Norms*, 12 AM. J. COMMUNITY PSYCHOL. 537, 547–49 (1984).

105 The anti-smoking advertising campaign frequently uses peer pressure, social norms, and celebrity endorsements to convey its message. *See* Exhibit, National Library of Medicine, Anti-Smoking Campaigns, *available at* http://www.nlm.nih.gov/exhibition/visualculture/antismoking.html (last visited Feb. 7, 2005). The assorted devices employed in anti-smoking campaigns are part of a recent National Library of Medicine exhibit entitled "Visual Culture and Public Health Posters." *See* http://www.nlm.nih.gov/exhibition/visualculture/vchome.html (last visited Feb. 7, 2005).

behavior.[106] Both Cass Sunstein and Lawrence Lessig, for example, have argued that government interventions can facilitate desirable social norms to deter unhealthy or risky behaviors.[107] Sunstein highlights what he calls "the expressive function of law" where legal rules convey value judgments about certain activities, and this moral suasion influences underlying social norms.[108] Consequently, though legal sanctions may not directly inhibit undesirable behavior, they may have an indirect effect on behavior by changing social norms.[109] Similarly, Lessig attributes to legal rules the power to change social perceptions through the "ambiguation" of social norms.[110] When certain behaviors become illegal, an individual's deviation from a peer group's risky behavior is interpreted as an effort to comply with the law rather than a departure from the group.[111] Thus, peer pressure to continue engaging in the harmful and socially undesirable activity decreases.[112] Both of these theories suggest that legal sanctions can play a role in Medicaid policy reform, and that reformers should consider punishing unhealthy behaviors, such as smoking or eating fatty foods. More generally, while these approaches both appreciate the difficulty of changing individual behaviors that are embedded within a social fabric of norms, they argue that government interventions can still influence a peer group's beliefs and encourage healthy behaviors.

The menu of specific policy recommendations provided here may be useful, but the discussion's most valuable contribution lies in its effort to move beyond the simple policy prescription of promoting formal education and towards more precise and tailored educational policies.[113] Policymakers may find public health campaigns useful, whether those campaigns simply publicize valuable health information or try to influence the social norms underlying unhealthy behav-

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106 *See* Richard H. McAdams, *The Origin, Development, and Regulation of Norms*, 96 MICH. L. REV. 338 (1997).

107 *See* Lawrence Lessig, *The Regulation of Social Meaning*, 62 U. CHI. L. REV. 943, 962–72 (1995); Cass R. Sunstein, *On the Expressive Function of Law*, 144 U. PA. L. REV. 2021, 2029–32 (1996) [hereinafter Sunstein, *Expressive Function of Law*]; Cass R. Sunstein, *Social Norms and Social Roles*, 96 COLUM. L. REV. 903, 953–65 (1996) [hereinafter Sunstein, *Social Norms*].

108 *See* Sunstein, *Expressive Function of Law*, *supra* note 107, at 2025–26; Sunstein, *Social Norms*, *supra* note 107, at 964–65.

109 *See* Sunstein, *Expressive Function of Law*, *supra* note 107, at 2032–33; Sunstein, *Social Norms*, *supra* note 107, at 958–59.

110 *See* Lessig, *supra* note 107, at 1010.

111 *Id.* at 1010–12.

112 *Id.*

113 Recall the debate over the efficacy of promoting formal education as a strategy to improve health. *See supra* note 68 and accompanying text. This approach is still attractive to many researchers, as "years of formal education" remains a commonly used metric. *See, e.g.*, Lleras-Muney, *supra* note 67, at 8 (solving the endogeneity problem by adapting the metric to reflect compulsory education laws as instrumental variables).

ior. Under appropriate circumstances, both methods have been shown to succeed in improving health behaviors.[114]

2. *Productive Efficiency*

Productive efficiency, as Grossman's 1972 paper suggests,[115] is the second mechanism through which education improves health. Whereas the allocative efficiency hypothesis pertains to the selection of health inputs, the productive efficiency hypothesis pertains to the marginal productivity of given health inputs.[116] The productive efficiency hypothesis suggests that higher levels of education lead individuals to make better use—i.e., enjoy a higher marginal productivity—of a given health input.[117] Consequently, an educated individual will produce more health stock from health care or medical care, such as a doctor's visit or a medical procedure, than a comparable individual with less education.[118]

From a strictly econometric perspective, it is difficult to measure the marginal productivity of specific inputs because doing so requires controlling for all other inputs and, consequently, the productive efficiency hypothesis has little empirical support. The proposition that certain psychosocial variables lead to more efficient uses of health care resources does, however, find support in psychological studies. Surveying those psychosocial variables can elucidate why psychosocial factors, including education, can increase the efficiency of health production.

a. *Trust and Accepting Authority*

The doctor-patient relationship has long been founded on trust and authority. The patient entrusts the doctor to make medical decisions in the patient's best interest and submits to the doctor's authority in following the prescribed treatment. The centrality of trust and authority, accompanied by the social norm that places the highest ethical duties upon the doctor, are not mere cultural anomalies. As Kenneth Arrow's seminal 1963 article illustrates, the social norms of trust and authority arise to resolve market failures that would otherwise make the free market unable to organize efficient transactions in health care.[119] Such market failures result from the complexity of medical information, the immeasurability of health care quality, and the patient's uncertainty and inability to make informed health care

114 *See supra* notes 97, 104–05 and accompanying text.

115 *See* Grossman, *supra* note 23, at 223–24, 247.

116 *See id.*

117 *See id.*

118 *See id.*

119 *See* Kenneth J. Arrow, *Uncertainty and the Welfare Economics of Medical Care*, 53 AM. ECON. REV. 941, 965–66 (1963).

decisions.[120] Without a strong social norm of patient trust, and the corresponding ethical duties placed upon the doctor, the market for health care would collapse under uncertainty.[121]

However, even though the market depends on trust and acceptance of authority, individuals vary significantly in the degree to which they trust health care providers, and empirical studies have shown that less-trusting patients exhibit poorer health behaviors and are less likely to seek necessary care. Patients who trust providers are more likely to adhere to prescribed regimens,[122] enroll in innovative cancer treatments,[123] and engage in healthy behaviors such as exercise, smoking cessation, and safe sexual practices.[124] These results comport with other studies that measure patients' perceptions of health care providers' authority. One study found that individuals who viewed physicians as authority figures and expected them to assume authority in their role as health care providers exhibited greater health care utilization.[125] A similar study found that skepticism towards health care providers was associated with less healthy behavior, less health care utilization, and lower compliance rates in preventive health care regimens.[126] These findings are particularly unsettling because patient skepticism is also associated with low income, less education, and a lack of insurance[127]—the very individuals who are most in need of preventative health care.[128]

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120 *See id.* at 951–52.

121 *See id.* at 965–66.

122 David H. Thom et al., *Further Validation and Reliability Testing of the Trust in Physician Scale*, 37 MEDICAL CARE 510 (1999).

123 Doris T. Penman et al., *Informed Consent for Investigational Chemotherapy: Patients' and Physicians' Perceptions*, 2 J. CLINICAL ONCOLOGY 849 (1984).

124 Dana G. Safran et al., *Linking Primary Care Performance to Outcomes of Care*, 47 J. FAMILY PRAC. 213, 214–18 (1998). *See generally* Mark A. Hall, *Law Medicine, and Trust*, 55 STAN. L. REV. 463, 478–82 (providing an overview of the therapudic value of patient trust); David H. Thom et al., *Measuring Patients' Trust in Physicians When Assessing Quality of Care*, 23:4 HEALTH AFF. 124 (emphasizing the clinical importance of understanding patients' trust in physicians and urging further empirical research).

125 Peter H. Ditto et al., *Beliefs About Physicians: Their Role in Health Care Utilization, Satisfaction, and Compliance*, 17 BASIC & APPLIED SOC. PSYCHOL. 23, 42 (1995).

126 Kevin Fiscella et al., *Skepticism Toward Medical Care and Health Care Utilization*, 36 MED. CARE 180, 183 (1998).

127 *Id.* at 183–84.

128 *See* John Z. Ayanian et al., *Unmet Health Needs of Uninsured Adults in the United States*, 284 JAMA 2061, 2061, 2065 (2000) (finding that the uninsured develop various medical conditions at higher rates than those covered by health insurance and that uninsured adults are significantly more likely to have their needs for preventative medical care unmet); Steffie Woolhandler & David U. Himmelstein, *Reverse Targeting of Preventive Care Due to Lack of Health Insurance*, 259 JAMA 2872, 2874 (1988) (finding the lack of health insurance to be the "strongest and most consistent predictor" for a failure to receive needed screening tests, placing the poor and uninsured at particularly high risk for various medical conditions).

Related studies find that race plays a significant role in shaping individuals' trust of health care providers. A 1999 Kaiser Family Foundation study, for example, found that views on whether the health care system "treats people equally" differed strikingly by race.[129] About two-thirds of African Americans and over half of Latinos believed they received lower-quality health care than whites; in contrast, the majority of whites believed care was delivered equitably.[130] Unfortunately, many of these feelings of distrust and discrimination by racial minorities are well-founded. A recent congressionally authorized report by the Institute of Medicine found that, even when controlling for income and insurance coverage, racial and ethnic minorities in fact received lower-quality care than whites.[131] Moreover, some studies suggest that the disparity in treatment stems directly from differences in physicians' perceptions of patients.[132] One study found that a patient's race affected physicians' perceptions of a patient's intelligence, beliefs about a patient's likelihood of engaging in risky behavior and adhering to medical advice, and feelings of affiliation towards patients.[133] Physicians' prejudices, whether well-meaning or reflecting outright racism, seem to validate African Americans' feelings of distrust towards the health care system.[134]

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129 Marsha Lillie-Blanton et al., *Race, Ethnicity, and the Health Care System: Public Perceptions and Expereinces*, 57 MED. CARE RES. & REV. 218, 227 (2000).

130 *Id.*

131 INSTITUTE OF MEDICINE, UNEQUAL TREATMENT: CONFRONTING RACIAL AND ETHNIC DISPARITIES IN HEALTH CARE 1–2 (Brian D. Smedley et al. eds., 2002), *available at* http://www.nap.edu/openbook/030908265X/html/index.html (last visited Dec. 21, 2004). In announcing the study, the Institute of Medicine noted:

> [M]inorities are less likely to be given appropriate cardiac medications or to undergo bypass surgery, and are less likely to receive kidney dialysis or transplants. In addition, several studies show significant racial differences in who receives appropriate cancer diagnostic tests and treatments. Minorities also are less likely to receive the most sophisticated treatments for HIV infection, which could forestall the onset of AIDS. By contrast, they are more likely to receive certain less-desirable procedures, such as lower limb amputations for diabetes and other conditions.

Press Release, Institute of Medicine, Minorities More Likely to Receive Lower-Quality Health Care, Regardless of Income and Insurance Coverage (Mar. 20, 2002), *available at* http://www4.nationalacademies.org/news.nsf/isbn/030908265X?OpenDocument (last visited Dec. 21, 2004).

132 INSTITUTE OF MEDICINE, *supra* note 131, at 162–74; Michael S. O'Malley et al., *The Association of Race/Ethnicity, Socioeconomic Status, and Physician Recommendation for Mammography: Who Gets the Message About Breast Cancer Screening?*, 91 AM. J. PUB. HEALTH 49, 52–53 (2001) (noting that physicians' perceptions regarding patient minority status and socioeconomic status may be responsible for difference in mammography recommendations among racial groups).

133 INSTITUTE OF MEDICINE, *supra* note 131, at 166.

134 *See id.* at 166–67. Note that physicians' prejudicial attitudes towards racial minorities both directly affect minority health, because these attitudes cause physicians to provide minorities with inadequate medical attention, and indirectly affect minority health, by interfering with the ability to develop trust-based relations.

Regardless of whether perceptions of prejudice are responses to actual discrimination, minorities' attitudes regarding the health care establishment are consistent with the unfortunate observation that they fail to seek adequate health care, even when controlling for access and income. Studies have found African Americans were less likely to complete prescribed medical regimens following hospital discharges,[135] comply with well childcare guidelines,[136] and utilize available prenatal care.[137] Notably, African Americans are less likely to seek care, including vitally important procedures such as periodic examinations for breast cancer, even when they enjoy economic and logistical access to health care equal to that of whites.[138]

If, in fact, distrust leads to sub-optimal health care utilization, then trust is a positive complement to health care. That is, a trusting individual is more likely to seek available care and follow prescribed regimens than a distrusting patient, thereby increasing the efficacy of health care access. Accordingly, efforts should focus on increasing patient trust. The Institute of Medicine has proposed initiating culturally appropriate patient education programs, including disseminating CD-ROMs, publishing pamphlets, and conducting in-person consultation, to encourage patients to access appropriate care and participate in treatment decisions.[139] These recommendations appear to be low-cost and potentially effective policy interventions. However, because so much African-American distrust is unfortunately validated, interventions should also target doctors. Race sensitivity training or other counseling programs may alert a physician to her inadvertent race-based presumptions and prejudices.[140] In addition, increasing the

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135 *See* David A. Ganz et al., *Adherence to Guidelines for Oral Anticoagulation After Venous Thrombosis and Pulmonary Embolism*, 15 J. GEN. INTERNAL MED. 776, 778–79 (2000) (finding that African Americans were less likely than the average patient to continue therapy for an adequate time period after diagnosis with deep venous thrombosis or a pulmonary embolism); Linda E. Rose et al., *The Contexts of Adherence for African Americans with High Blood Pressure*, 32 J. ADVANCED NURSING 587, 591–92 (2000) (finding that African American males fear physicians' judgmentalism and are more likely to return for care when physicians are deemed to be empathetic).

136 Donna S. Ronsaville & Rosemarie B. Hakim, *Well Child Care in the United States: Racial Differences in Compliance with Guidelines*, 90 AM. J. PUB. HEALTH 1436, 1439 (2000) (finding that race was a stronger predictor of noncompliance with well childcare guidelines than education, income, and low-quality prenatal care).

137 W. Parker Frisbie et al., *Prenatal Care Utilization Among Non-Hispanic Whites, African Americans, and Mexican Americans*, 5 MATERNAL & CHILD HEALTH J. 21, 27(2001) (finding that race remained a strong predictor of low utilization of prenatal care even when controlling for other demographic factors, socioeconomic status, and medical risk).

138 Sandra C. Garmon Bibb, *The Relationship Between Access and Stage at Diagnosis of Breast Cancer in African American and Caucasian Women*, 28 ONCOLOGY NURSING F. 711, 714–15 (2001) (finding that among female military personnel, who are all guaranteed equal access to medical care, African Americans with breast cancer received diagnoses at later stages then whites).

139 INSTITUTE OF MEDICINE, *supra* note 131, at 196–98.

140 *See id.* at 213–14 (recommending cross-cultural education for physicians).

number of African-American and Hispanic doctors could diminish distrust among racial minority patients.[141] If increasing minority representation in the health care professions would increase minority health care utilization, then the resulting social returns would likely justify public subsidies for minority medical school scholarships.[142] Lastly, some scholars have lamented the departure of African-American-run hospitals precisely because they reduced distrust among minority patients,[143] and perhaps sponsoring increased African-American control over health care institutions could have similar results.

b. *Social Support*

Social support, usually measured by the number and intimacy of an individual's social relations or an individual's involvement in social activities, has proven to be a robust contributor to good health. Though the tradition in this area of study dates itself back to Emile Durkheim,[144] recent examination of this relationship by social epidemiologists blossomed following Berkman and Syme's 1979 study.[145] This nine-year longitudinal study of residents of Alameda, California found that individuals who were more socially integrated at the outset of the study lived longer than those with fewer social ties.[146] Subsequent prospective population studies have established correlations be-

141 *See id.* at 186 (calling for an increase in the proportion of underrepresented minorities among health professionals); *see also* THE SULLIVAN COMMISSION, MISSING PERSONS: MINORITIES IN THE HEALTH PROFESSIONS 3 (2004) (advocating efforts to increase racial minority representation in the health professions as a means to reversing America's growing health disparities), *available at* http://admissions.duhs.duke.edu/sullivancommission/documents/Sullivan_Final_Report_000.pdf.

142 *See* THE SULLIVAN COMMISSION, *supra* note 141, at ch. 5 (advancing several recommendations to subsidize minority representation); Position Paper, American College of Physicians, Racial and Ethnic Disparities in Health Care (Mar. 31, 2003), *reprinted in* 141 ANNALS OF INTERNAL MED. 226 (2004), *available at* http://www.acponline.org/hpp/healthcare_disp.pdf (last visited Dec. 21, 2004). Both sensitivity campaigns and increasing the number of minority doctors also have the power to influence social norms within minority communities to make medical providers more trustworthy and accessible to African Americans. *See* INSTITUTE OF MEDICINE, *supra* note 131, at 186, 199–214. Thus, the TRA offers an additional, alternative mechanism for inducing African American trust of doctors by creating more conducive social norms to induce appropriate health-seeking behavior.

143 *See, e.g.*, Bruce Vladeck, Keynote Presentation II, *in* CALIFORNIA ASSOCIATION OF PUBLIC HOSPITALS AND HEALTH SYSTEMS, THE UNINSURED DEBATE: HEALTH INSURANCE VS. HEALTH CARE ACCESS 10, 14–15 (2000), *at* http://www.caph.org/publications/uninsured.pdf.

144 EMILE DURKHEIM, SUICIDE 373–78 (1951).

145 Lisa F. Berkman & S. Leonard Syme, *Social Networks, Host Resistance, and Mortality: A Nine-Year Follow-Up Study of Alameda County Residents*, 109 AM. J. EPIDEMIOLOGY 186 (1979).

146 *Id.* at 200.

tween interpersonal relationships and mortality, physical morbidity, and recovery from chronic and other types of illnesses.[147]

Researchers have established three main types of supportive social interactions: emotional, informational, and instrumental.[148] Emotional support "involves the verbal and nonverbal communication of caring and concern" and can provide strength to individuals coping with illness, mitigate the impact of life-related stressors, and give meaning or purpose to the daily struggles of investing in one's health.[149] Such emotional support can improve health through a number of different pathways. First, a "stress-buffering model" suggests that emotional support mitigates the stressors shown to increase the incidences of certain illnesses, including physiologic or maladaptive behavioral responses to stressful events.[150] Emotional support

147 *See, e.g.*, Dan G. Blazer, *Social Support and Mortality in an Elderly Community Population*, 115 AM. J. EPIDEMIOLOGY 684, 691–92 (1982) (duplicating Berkman and Syme's findings of an association between longevity and perceived support, social networks, and social interaction); Sheldon Cohen et al., *Social Ties and Susceptibility to the Common Cold*, 277 JAMA 1940, 1942 (1997) (observing that "the rate of colds [among persons exposed to a common cold virus in an experiment] decreased with increased social network diversity"); George A. Kaplan et al., *Social Connections and Mortality from All Causes and from Cardiovascular Disease: Prospective Evidence from Eastern Finland*, 128 AM. J. EPIDEMIOLOGY 370, 377 (1988) (finding that "reduced social connections are related to mortality from cardiovascular disease"); Thomas M. Vogt et al., *Social Networks as Predictors of Ischemic Heart Disease, Cancer, Stroke, and Hypertension: Incidence, Survival and Mortality*, 45 J. CLINICAL EPIDEMIOLOGY 659, 662–64 (1992) (observing that social networks increased an individual's likelihood of surviving ischemic heart disease, cancer, and stroke). For surveys of studies establishing the more general relationship between social relations and health, see Lisa F. Berkman et al., *Gender Differences in Cardiovascular Morbidity and Mortality: The Contribution of Social Networks and Support*, 15 ANNALS BEHAV. MED. 112 (1993); W. Eugene Broadhead et al., *The Epidemiologic Evidence for a Relationship Between Social Support and Health*, 117 AM. J. EPIDEMIOLOGY 521 (1983); Sheldon Cohen & Thomas Ashby Wills, *Stress, Social Support, and the Buffering Hypothesis*, 98 PSYCHOL. BULL. 310 (1985); James S. House et al., *Social Relationships and Health*, 241 SCI. 540 (1988); Alan Reifman, *Social Relationships, Recovery from Illness, and Survival: A Literature Review*, 17 ANNALS BEHAV. MED. 124 (1995).

148 *See* Sheldon Cohen et al., *Social Relationships and Health*, *in* SOCIAL SUPPORT MEASUREMENT AND INTERVENTION: A GUIDE FOR HEALTH AND SOCIAL SCIENTISTS 3, 4 (Sheldon Cohen et al. eds., 2000); James S. House & Robert L. Kahn, *Measures and Concepts of Social Support*, *in* SOCIAL SUPPORT AND HEALTH 83, 102–03 (Sheldon Cohen & S. Leonard Syme eds., 1985); Peggy A. Thoits, *Social Support and Psychological Well-Being: Theoretical Possibilities*, *in* SOCIAL SUPPORT: THEORY, RESEARCH, AND APPLICATIONS 51, 53 (Irwin G. Sarason & Barbara R. Sarason eds., 1985).

149 Vicki S. Helgeson & Sheldon Cohen, *Social Support and Adjustment to Cancer: Reconciling Descriptive, Correlational, and Intervention Research*, 15 HEALTH PSYCHOL. 135, 135 (1996); *see also* Thoits, *supra* note 148, at 53 (describing emotional support as "assertions or demonstrations of love, caring, esteem, value, empathy, sympathy, and/or group-belonging.").

150 *See* Sheldon Cohen & Garth McKay, *Social Support, Stress, and the Buffering Hypothesis: A Theoretical Analysis*, *in* 4 HANDBOOK OF PSYCHOLOGY AND HEALTH 253, 253 (Andrew Baum et al. eds., 1984). A common use of the stress-buffering model is to evaluate the role of social support for cancer victims. *See, e.g.*, Alice B. Kornblith et al., *Social Support as a Buffer to the Psychological Impact of Stressful Life Events in Women with Breast Cancer*, 91 CANCER 443, 450 (2001).

from social relations can also assure individuals that they can get assistance from others to cope with perceived demands, thereby preventing individuals from viewing a particular situation to be highly stressful.[151] In addition, emotional support from social relations can act more directly by promoting a variety of positive psychological states that can enhance immune function and induce individuals to engage in healthy behaviors and follow proscribed medical regimens.[152]

Social networks have also served as sources of valuable information, both in assisting individuals struggling with an illness and in generally promoting healthy behaviors.[153] Informational support can also influence health outcomes "by providing patients with ways of managing their illness and coping with symptoms."[154] It "may enhance patients' optimism about the future and thus reduce feelings of future vulnerability."[155] Thus, informational support can operate through many of the same pathways as emotional support.

Lastly, social networks also provide supportive social interaction via instrumental support. Instrumental support "involves the provision of material goods, for example, transportation, money, or assistance with household chores" and can contribute significantly to an individual's ability to cope with the stresses and burdens of an illness.[156]

The lesson from these studies is that social networks, through a variety of proffered mechanisms, improve health outcomes and, particularly for individuals struggling with a chronic illness, improve the effectiveness of medical care. These effects should be sufficient to convince health care providers to develop interventions and treatments that provide social support. Moreover, empirical studies confirm the success of some of these interventions, particularly for cancer patients. A team of researchers at UCLA, for example, examined the effect of six weekly ninety-minute group counseling and information

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151 *See* Cohen et al., *supra* note 148, at 10–11.

152 *See* Sheldon Cohen & S. Leonard Syme, *Issues in the Study and Application of Social Support*, *in* SOCIAL SUPPORT AND HEALTH, *supra* note 148, at 6–7; Thomas Ashby Wills, *Supportive Functions of Interpersonal Relationships*, *in* SOCIAL SUPPORT AND HEALTH, *supra* note 148, at 61, 67–68. Another way to characterize the effect of emotional support is that it reduces an individual's discount rate; thus, the individual ascribes greater value to future utility and invests more in future health by seeking preventative care. *See infra* Part III.B.2 (discussing within the intertemporal utility function the implications of an endogenous discount rate). It is not difficult to imagine why an individual's emotional support would lead to a greater valuation of the future.

153 The utility of acquiring information to promote health, whether from social networks or from formal education, supports one version of the allocative efficiency hypothesis. *See supra* notes 64–71 and accompanying text.

154 Helgeson & Cohen, *supra* note 149, at 135–36.

155 *Id.* at 136.

156 *Id.*

sessions for malignant melanoma patients.[157] Six months after the group intervention ended, patients who attended the sessions exhibited reduced psychological distress and improved immune system functioning than a control group,[158] and six years later the same patients exhibited decreased recurrence and lower mortality rates.[159] Similarly, David Spiegel studied the impact of weekly ninety-minute group discussions on metastatic breast cancer patients.[160] His team of researchers found that by the end of the year, participants of the weekly sessions reported less depression, greater vigor, and less fatigue than a control group,[161] and ten years later the program had increased participants' survival, on average, by 19 months.[162]

The success of these interventions contains lessons for Medicaid policymakers. One easy policy strategy would be to fund the creation of social support groups or group counseling. A more tailored approach would be to develop interventions that fulfill the specific roles provided by informational or instrumental supports. Thus, email listserves or chat groups, which might not provide individuals with real emotional support, could facilitate the delivery of desired health-related information. Similarly, policymakers may find that providing recipients with periodic car service, prepared meals, or even access to low-skilled handymen may prove more cost effective than providing coverage for certain medical procedures. Though providing logistical services is unlikely to offer sufferers of chronic illnesses the adequate human contact that many lack, it would provide assurance that daily chores, such as preparing meals, running errands, or travel to the doctor's office, will not be a burden. These services could reduce the daily toil of chronic illnesses and provide valuable, health-enhancing instrumental support.

More challenging would be an effort to encourage, more broadly, the creation of social networks. Robert Putnam, for example, has cited the relative lack of social networks in the United States as a cause for inadequate investment in human capital and certain failures of

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157 Fawzy I. Fawzy et al., *A Structured Psychiatric Intervention for Cancer Patients: I. Changes Over Time in Methods of Coping and Affective Disturbance*, 47 ARCHIVES GEN. PSYCHIATRY 720, 721 (1990).

158 Fawzy I. Fawzy et al., *A Structured Psychiatric Intervention for Cancer Patients: II. Changes Over Time in Immunological Measures*, 47 ARCHIVES GEN. PSYCHIATRY 729, 733 (1990).

159 Fawzy I. Fawzy, *Malignant Melanoma: Effects of an Early Structured Psychiatric Intervention, Coping, and Affective State on Recurrence and Survival 6 Years Later*, 50 ARCHIVES GEN. PSYCHIATRY 681, 688 (1993).

160 David Spiegel et al., *Group Support for Patients with Metastatic Cancer: A Randomized Prospective Outcome Study*, 38 ARCHIVES GEN. PSYCHIATRY 527, 528–29 (1981).

161 *Id.* at 530.

162 David Spiegel et al., *Effect of Psychosocial Treatment on Survival of Patients with Metastatic Breast Cancer*, 2 LANCET 888, 889 tbl. III (1989).

democratic politics.[163] Perhaps concerted efforts toward developing local community associations or neighborhood groups would not only improve health outcomes, but would also deliver other economic and social benefits. This is probably beyond the scope of Medicaid policy (and an unlikely area for government success[164]), but modest efforts to extend social networks to certain populations could prove to be useful.

c. *Control*

Some studies observe that an individual's control, or even "perceived control," over elements of daily life can explain variation in health outcomes.[165] For example, psychologist Shelly Taylor measured differences in the degree to which women with breast cancer believed they could control whether their cancers would come out of remission, and she found that women who believed their cancers were controllable exhibited a greater ability to adjust to the psychological and physiological toils of breast cancer.[166] Perceived control generates even stronger results in the elderly. Ellen Langer and Judith Rodin conducted an experiment in which a nursing home director delegated certain responsibilities, including scheduling movies and tending to plants, to one group of elderly residents but not to the other.[167] The group with greater control became happier, more ac-

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163 *See* ROBERT D. PUTNAM, BOWLING ALONE: THE COLLAPSE AND REVIVAL OF AMERICAN COMMUNITY (2000).

164 *See* ALEXIS DE TOCQUEVILLE, DEMOCRACY IN AMERICA 68 (1835) (

> In some countries a power exists which, though it is in a degree foreign to the social body, directs it, and forces it to pursue a certain track. In others the ruling force is divided, being partly within and partly without the ranks of the people. But nothing of the kind is to be seen in the United States; there society governs itself for itself.

). Tocqueville, for one, would be skeptical of the prospects of government-created communities in the United States.

165 As the studies in this Section illustrate, the distinction between control and perceived control is nebulous, so no effort is made here to distinguish the two. One important note is that while perceived control is often the central focus for psychologists, perhaps because it is easier to measure through self-assessment, it does not imply the absence of actual control. *See* Suzanne Thompson et al., *Illusions of Control, Underestimates, and Accuracy: A Control Heuristic Explanation*, 123 PSYCHOL. BULL. 143 (1998). For policymaking purposes, moreover, delegating actual control is a good mechanism to increase an individual's perceived control over certain elements of their life. *See* Barbara A. Israel et al., *Health Education and Community Empowerment: Conceptualizing and Measuring Perceptions of Individual, Organizational, and Community Control*, 21 HEALTH EDUC. Q. 149, 149–66 (1994).

166 Shelley E. Taylor et al., *Attributions, Beliefs About Control, and Adjustment to Breast Cancer*, 46 J. PERSONALITY & SOC. PSYCHOL. 489, 498–99 (1984).

167 Ellen J. Langer & Judith Rodin, *The Effects of Choice and Enhanced Personal Responsibility for the Aged: A Field Experiment in an Institutional Setting*, 34 J. PERSONALITY & SOC. PSYCHOL. 191, 193–94 (1976).

tive,[168] and exhibited a lower mortality rate eighteen months later.[169] Richard Shultz similarly observed that permitting elderly nursing home residents to decide the frequency and duration of visits from college students led to greater activity and fewer medications consumed, as compared to a control group.[170] Other studies have illustrated that perceived control over both routine schedules and stressful events is associated with better adjustment to chronic illnesses, greater immunity to disease, increased happiness, and, among residents of nursing homes, improved health and adjustment to the nursing home environment.[171]

Control fits well into the Grossman model, as education could be interpreted as a proxy for the degree of control an individual has over her job, career, and daily schedule. Such forms of control are very closely associated with socioeconomic status, and thus variance in control might explain the correlation between socioeconomic status and health.[172] Notably, the patients received the same health care in all of the above experiments. Because control may complement health care and improve the effectiveness of assorted treatments, policymakers should aim to furnish patients with control over their treatments, schedules, and other Medicaid services.

These principles also apply to policy decisions regarding Medicaid's drug coverage for chronic conditions, such as HIV. Currently, states vary in the scope and duration of their drug coverage for HIV-infected individuals,[173] and most state Medicaid programs pay for

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168 *Id.* at 197.

169 Judith Rodin & Ellen J. Langer, *Long-Term Effects of a Control-Relevant Intervention with the Institutional Aged*, 35 J. PERSONALITY & SOC. PSYCHOL. 897, 899–900 (1977).

170 Richard Schulz, *Effects of Control and Predictability on the Physical and Psychological Well-Being of the Institutionalized Aged*, 33 J. PERSONALITY & SOC. PSYCHOL. 563, 569–71 (1976). A follow-up study to the Schulz experiment revealed some interesting, but sad, results. *See* Richard Schulz & Barbara Hartman Hanusa, *Long-Term Effects of Control and Predictability-Enhancing Interventions: Findings and Ethical Issues*, 36 J. PERSONALITY & SOC. PSYCHOL. 1194, 1195–98 (1978). The college students stopped visiting after the study concluded, and many months later Schulz returned to the nursing home to observe that the individuals who had control over the visits—and then lost that control when the visits ceased—suffered from a higher mortality rate than the control group. *Id.* at 1198.

171 *See* Judith Rodin, *Aging and Health: Effects of the Sense of Control*, 233 SCI. 1271, 1273 (1986) (concluding from several nursing home studies that "increased opportunities for control and a greater sense of personal efficacy can have a positive effect on the physical and psychological status of the institutionalized aged"); Shelley E. Taylor & Jonathon D. Brown, *Illusion and Well-Being: A Social Psychological Perspective on Mental Health*, 103 PSYCHOL. BULL. 193, 197–98 (1988); Sue A. Wiedenfield et al., *Impact of Perceived Self-Efficacy in Coping with Stressors on Components of the Immune System*, 59 J. PERSONALITY & SOC. PSYCHOL. 1082, 1089–93 (1990) (finding that patients' perceptions of control over stressors corrolated with immunological and physiological benefits).

172 *See* Marmot et al., *supra* note 42.

173 *See* TIM WESTMORELAND, THE HENRY J. KAISER FOUNDATION, MEDICAID & HIV/AIDS POLICY: A BASIC PRIMER 39–42 (1999), *available at* http://www.kff.org/hivaids/upload/13316_1.pdf (last visited Dec. 21, 2004).

medications only after the Medicaid beneficiary begins exhibiting symptoms of HIV infection.[174] While at least one study indicates that Medicaid dollars would be better spent if they targeted earlier intervention,[175] the argument for early and comprehensive drug therapy is strengthened when considering control as a complement to medical care. A medical regimen that allows for self-administration, as opposed to protocols that require hospital visits, allows patients to maintain control over their daily schedules and their interactions with health care providers. The experimental findings revealing the importance of perceived control suggest that entrusting patients with this sort of autonomy will increase the effectiveness of their treatment and thereby increase the efficiency of public spending on health care.

d. *Personality and Emotion*

An interesting body of literature has identified certain personality characteristics that affect health outcomes, as several studies have found that the prevalence of certain emotions and character traits are associated with higher morbidity rates. Many of these negative emotions correlate with each other and with low socioeconomic status, leading some to identify a "disease-prone personality."[176]

Researchers of personality and emotions have identified numerous character traits that correlate with poor health. Specifically, hostility, anger, anxiety, emotional suppression, depression, fatalism, and pessimism have all been found to affect the incidences and progressions of cancer, heart disease, AIDS, and several other illnesses, which in turn have lead to increases in overall health care utilization and costs.[177] Moreover, Howard Friedman and his coauthors have shown

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174 *See id.* at 15–19, 106 ("HIV infection that is not accompanied by one of the AIDS-defining conditions is not sufficient to qualify for Medicaid."). Additional funding for retroviral therapy for low-income HIV-infected individuals comes from state-based AIDS Drug Assistance Programs (ADAPs), which are funded by the Ryan White Comprehensive AIDS Resources Emergency Act. *See id.* at 120; INSTITUTE OF MEDICINE, NO TIME TO LOSE: THE AIDS CRISIS IS NOT OVER 168–70 (Monica S. Ruiz et al. eds., 2001).

175 *See* Bruce R. Schackman et al., *Cost Effectiveness of Earlier Initiation of Antiretroviral Therapy for Uninsured HIV-Infected Adults*, 91 AM. J. PUB. HEALTH 1456, 1457–58 (2001).

176 *See, e.g.*, Howard S. Friedman & Stephanie Booth-Kewley, *The "Disease-Prone Personality": A Meta-Analytic View of the Construct*, 42 AM. PSYCHOLOGIST 539, 539 (1987). Some have constructed a more specific "cancer-prone personality." *See* Lydia Temoshok et al., *The Relationship of Psychosocial Factors to Prognostic Indicators in Cutaneous Malignant Melanoma*, 29 J. PSYCHOSOMATIC RES. 135, 141 (1985).

177 *See* Suzanne G. Haynes et al., *The Relationship of Psychosocial Factors to Coronary Heart Disease in the Framingham Study*, 111 AM. J. EPIDEMIOLOGY 37, 54 (1980) (finding "Type A behavior is a significant risk factor for CHD [coronary heart disease] in both men and women under 65 years of age"); Carlos Iribarren et al., *Association of Hostility with Coronary Artery Calcification in Young Adults*, 283 JAMA 2546, 2546 (2000) (finding that a "high hostility level may predispose young adults to coronary artery calcification"); Laura D. Kubzansky et al., *Anxiety and Coronary Heart Disease: A Synthesis of Epidemiological, Psychological, and Experimental Evidence*, 20 ANNALS BEHAV. MED. 47, 55 (1998) (suggesting anxiety may ac-

that certain personality traits identified in children may affect longevity and mortality rates.[178]

While researchers have met only preliminary success in identifying specific mechanisms that link character traits with adverse health outcomes, several alternative pathways have been proposed. One pathway follows from the traits themselves: anxiety, hostility, anger, and emotional suppression are believed to lead to physiological stress, and thereby may affect blood pressure and immunological capacity.[179] Another less direct pathway suggests that individuals who exhibit higher levels of fatalism, pessimism, or depression are less likely to seek health care or follow prescribed regimens.[180] They may be less willing to wait in lines at hospitals or doctors' offices, follow demanding health care regimens that only show benefits over time, or expend resources in nutrition or exercise that similarly only show effects over time.[181] Likewise, fatalism, pessimism, and depression are associated with a tendency to disengage from or quit health care regimens, and similar negative emotions can leave an individual with fewer emotional resources to cope with difficult illnesses or treatments.[182] Stern and Caldicott suggest a third and more basic pathway, whereby clinicians simply avoid treating "the angry patient" by transferring individuals with certain emotional traits to colleagues rather than dealing directly with the illnesses.[183] Through all of these causal mechanisms, negative emotions disrupt the efficacy of health care delivery and

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count for some of the incidence of coronary heart disease); Edward A. Walker et al., *Psychiatric Illness and Irritable Bowel Syndrome: A Comparison with Inflammatory Bowel Disease*, 147 AM. J. PSYCHIATRY 1656, 1658 (1990) (finding a correlation between irritable bowel syndrome and "a prior history of panic disorder generalized anxiety disorder, phobia, major depression, or somatization disorder"). *See generally* Michael F. Scheier & Michael W. Bridges, *Person Variables and Health: Personality Predispositions and Acute Psychological States as Shared Determinants for Disease*, 57 PSYCHOSOMATIC MED. 255 (1995) (reviewing the literature).

178 Howard S. Friedman et al., *Does Childhood Personality Predict Longevity?*, 65 J. PERSONALITY & SOC. PSYCHOL. 176, 181–83 (1993).

179 *See, e.g.*, Ichiro Kawachi et al., *A Prospective Study of Anger and Coronary Heart Disease: The Normative Aging Study*, 94 CIRCULATION 2090, 2093 (1996) ("The biological mechanisms by which anger may increase the risk of [coronary heart disease] include discharge of circulating catecholamines, increased myocardial oxygen demand, vasospasm and platelet aggregability.").

180 *See* Scheier & Bridges, *supra* note 177, at 261–63 (noting that patients exhibiting signs of "fatalism and pessimism" are "more likely to withdraw prematurely from the activities of life and to give up on the hope of recovering health").

181 *See id.*

182 *See id.*; *see also* Laura Smart Richman, et al., *Positive Emotion and Health: Going Beyond the Negative*, 24 HEALTH PSYCHOL. (forthcoming 2005) (observing that positive emotion also affects health outcomes) (working paper at 20, on file with author).

183 *See* David T. Stern & Catherine V. Caldicott, *Turfing: Patients in the Balance*, 14 J. GEN. INTERNAL MED. 243, 243 (1999). One explanation for this is that treating angry patients requires more time and resources, *see* John Murtagh, *The Angry Patient*, 20 AUSTL. FAM. PHYSICIAN 388 (1991) (describing the special steps physicians need to take to deal with angry patients), which, in the aggregate, translates into higher costs of care.

could be labeled "negative complements" that reduce the marginal productivity of health care inputs.

While the conventional view suggests that personality traits are inherent to an individual and difficult, if not impossible, to change through interventions, some researchers have identified and measured external causes of some of the negative emotions associated with poor health. A study headed by Robert Williams, for example, asked individuals to list the number of "major life events" within the six-month period and the number of daily "hassles" and "uplifts" within the week prior to receiving either inpatient or outpatient care.[184] Two years later, the individuals with either a large number of major life events or many daily hassles and uplifts were more likely to be hospitalized, and the incidence of daily hassles was independently predictive of subsequent outpatient utilization.[185] Similar studies have found associations between major life events and daily hassles and uplifts with other measures of health status and health care utilization.[186] Such life-related struggles can affect health in two ways: they can either indirectly cause poor health by contributing to the negative emotions described above (which have their own adverse health outcomes), or they can directly affect an individual's logistical ability to cope with an illness, follow a prescribed regimen, or find resources or time to invest in other health inputs. Through either pathway, these causes of emotional distress, like the negative emotions themselves, reduce the effectiveness of health care and are therefore also negative complements to health care.

These findings present an interesting challenge to Medicaid policymakers because recent scholarship suggests that negative emotions mediate the relationship between socioeconomic status and health.[187] If policy interventions can alleviate either the causes of negative emotions or the negative emotions themselves, then such interventions could substitute for less effective health care. Identifying cost-effective strategies for accomplishing this, however, would be elusive. Some low-cost interventions include those discussed above in relation to providing social support, such as support groups or

184 *See* Robert Williams et al., *Life Events and Daily Hassles and Uplifts as Predictors of Hospitalization and Outpatient Visitation*, 34 SOC. SCI. & MED. 763, 763 (1992).

185 *Id.* at 766.

186 *Id.* at 763 (summarizing similar studies); *see also* Scott M. Monroe, *Major and Minor Life Events as Predictors of Psychological Distress: Further Issues and Findings*, 6 J. BEHAV. MED. 189 (1983); Jos W.R. Twisk et al., *Positive and Negative Life Events: The Relationship with Coronary Heart Disease Risk Factors in Young Adults*, 49 J. PSYCHOSOMATIC RES. 35 (2000).

187 *See* Linda C. Gallo & Karen A. Matthews, *Understanding the Association Between Socioeconomic Status and Physical Health: Do Negative Emotions Play a Role?*, 129 PSYCHOL. BULL. 10, 41 (2003) (concluding that the limited empirical evidence suggests that "the association between SES and health is mediated—at least in part—by cognative-emotional factors").

integrating group counseling services with medical care.[188] It may be useful to encourage health care providers to refer patients to counseling rather than pursuing additional medical care, and counseling or training for providers may prove to be a cost-effective strategy for addressing the problem of clinicians avoiding difficult patients. All of these policies advocate a more integrative approach to Medicaid, wherein supplementary services that accompany the provision of health care can address some of the difficult psychosocial concerns that are interlinked with medical issues. The current system of limiting benefits to health insurance fails to address a sizable body of psychological causes that underlie poor health.

3. *Summary: The Policy Implications of the E Variable*

While robust evidence suggests that higher levels of education improve health outcomes,[189] thus validating Grossman's inclusion of the *E* variable in his health demand function, there nevertheless remains significant uncertainty over the specific mechanism through which formal schooling causes better health.[190] This section treats the correlation between schooling and health as the tip of an iceberg of psychosocial variables, and the search for explanatory behavioral factors should not stop at formal schooling. A review of the health psychology literature introduces several mechanisms through which psychosocial factors can influence health, including mechanisms that promote healthy behaviors and thereby preempt the need for medical care and mechanisms that enhance the effectiveness of medical care itself. Finally, this section identifies a collection of specific variables that have been shown to lead to improved health outcomes.

Although translating the identification of psychosocial influences into a menu of policy prescriptions is necessarily a speculative exercise, the issues discussed here do have significant implications for improving Medicaid. First, despite the debate concerning the strength of the allocative efficiency hypothesis,[191] empirical studies suggest that disseminating useful health information contributes to improved health behaviors, thus information campaigns amount to an inexpensive and potentially effective health policy. This effectiveness has been shown in campaigns that promote seatbelt use and fiber consumption and those that illuminate the dangers of smoking.[192] Even if education improves the allocative efficiency of health inputs by improving

188 *See* Part III.A.2.b–c.

189 *See supra* notes 64–67 and accompanying text.

190 *See* Grossman, *Human Capital*, *supra* note 47, at 395–404.

191 *See supra* Part III.A.1.

192 *See supra* notes 72–75 and accompanying text.

the retention—as opposed to the acquisition—of information,[193] the returns from some public health campaigns are likely to justify their relatively low costs.

A lack of health-related information, however, is unlikely to be responsible for several unhealthy behaviors, such as smoking and unsafe sexual activity,[194] and policy strategies relying on simple dissemination of information will likely prove to be inadequate. For these public health challenges, policy strategies would benefit from consulting the TRA to design interventions that influence both an individual's health-related knowledge and her social group norms.[195] Some public health initiatives already have identified the utility of this approach and are employing similar strategies in campaigns that target unhealthy behaviors in certain ethnic communities.[196] These programs move beyond mere information dissemination and instead reach to alter the customs and social pressures that restrain improvements in health behavior.[197]

A review of the health psychology literature also identifies several psychosocial variables that can increase the productivity and effectiveness of other health care inputs, including medical care. These, too, pose significant policy implications for Medicaid. Studies have found that the propensity of a patient to trust a doctor contributes to better health outcomes.[198] Accordingly, policymakers should consider campaigns to familiarize distrusting individuals with the health care system, paying particular attention to racial minorities who tend to exhibit higher levels of distrust and subsequently are less likely to seek necessary care.[199] Other studies found that African Americans' distrust of white doctors is often warranted; as a result, race sensitivity training or affirmative action within the medical profession could promote trust and convince African Americans to seek necessary and beneficial care.[200] Social networks are also highly predictive of health outcomes, suggesting that Medicaid policymakers should consider integrating health care delivery with counseling and other support or community-building services.[201] The identification of control as a complement to medical care should lead policymakers to consider al-

193 *See supra* note 85.

194 *See supra* note 98 and accompanying text.

195 *See supra* notes 89–105 and accompanying text.

196 *See supra* notes 104–05.

197 *See id.*; *see also* José Alberto Uclés, *NHTSA Launches Successful Campaign to Promote Seat Belt Use Among Hispanics*, NHTSA Now, June 14, 2001, at 1 (discussing a campaign featuring community celebrities, Hispanic professionals, and public service announcements to Latin music beats).

198 *See supra* Part III.A.2.a.

199 *Id.*

200 *Id.*

201 *See supra* Part III.A.2.b.

ternative umbrellas of insurance coverage that would preserve beneficiaries' control over their treatments and daily schedules.[202] Finally, evidence indicating that negative emotions and stress cause significant disruptions to medical regimens suggests that health care should also be coupled with supplemental services or counseling support.[203] In sum, Medicaid policymakers have an assortment of policy options for addressing these important psychosocial factors and improving the effectiveness of the program's medical care.

B. The Intertemporal Utility Function

While the previous Section focused on the static component of the health demand function, this Section explores the implications of viewing health consumption from an intertemporal perspective. In the Grossman model, an individual optimizes the sum of her present and discounted future utility, and a decision to invest current resources and time into producing health stock is a trade of current utility for future utility. Consequently, an individual's relative valuation of current versus future utility is central to her health investment decisions.[204] Individuals who heavily discount future utility will opt for less investment in health and will instead expend more current resources on current utility-increasing consumption, whereas more future-oriented individuals will make larger investments in health inputs. Significantly, individuals in this latter category will also experience better health, so if an objective of Medicaid is to improve health outcomes, policymakers should induce beneficiaries to be more future-oriented.[205]

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202 *See supra* Part III.A.2.c.

203 *See supra* Part III.A.2.d.

204 *See supra* note 49 and accompanying text.

205 While many health policy scholars are comfortable with the conclusion that unhealthy individuals are making suboptimal investments in their health, *see, e.g.*, Smith, *supra* note 29, at 6 (noting that many Californians can afford to purchase health insurance but decide not to), economists may argue that government intervention to improve health is justified only to correct for externalities and other market imperfections—and otherwise policymakers should presume that individuals are maximizing their intertemporal utility. *See* Becker & Murphy, *supra* note 63, at 694–95; Behrman, *supra* note 68, at 5, 51–58. There are two responses to this argument. First, significant evidence exists that individuals in poor health—particularly the poor—impose substantial social costs. For example, smoking, excessive alcohol consumption, and inadequate exercise all impose social costs. *See* WILLARD G. MANNING ET AL., THE COSTS OF POOR HEALTH HABITS 8–11 (1991). Other bad health habits that impose social costs include a failure to obtain necessary immunizations and unsafe sexual activities. *See* Grossman & Kaestner, *supra* note 64, at 104–05 (citing Behrman, *supra* note 68). *But see* W. KIP VISCUSI, FATAL TRADEOFFS 58, 66-67 (1992) (suggesting that cigarette smoking creates net social gains—not costs—since individuals are alive only for their most productive years). Second, parents' actions substantially affect their children's health. *See, e.g.*, Thomas et al., *supra* note 75, and accompanying text. Even assuming that parents could completely internalize a child's utility in charting their own actions, the problems of bounded rationality and discounting future utilities are ac-

Recall that the multiple-period utility function, stated formally, is:

$$U = \sum_t [\eta^t U_t(h_t, Z_t)] \quad t = 0, 1, \ldots, n$$

where Z_t is consumption of standard commodities, h_t represents the number of healthy hours in period t, and η $(0< \eta <1)$ discounts future utilities. The greater an individual's value of η, the more she values future utility and the more likely she will make current investments in health stock. Thus, the value of the discount rate, η, is significant in predicting an individual's health.

The empirical problem is that the discount rate, η, is unobservable and, rather than denoting a concrete parameter, represents only a conceptual framework that relates the present to the future. Therefore, this Section formulates causal pathways, rather than identifying specific variables embodied in η, that connect the discount rate to health outcomes. It focuses on two possible formulations. First, that η is exogenous and plays a causal role in shaping health and other investment behaviors, and second, that η is endogenous and is a function of other investment decisions and behaviors.

1. *Exogenous Third Variable*

An exogenous discount rate suggests that an individual has a specific preference for the future—i.e., a specific value for η—that is embedded and constant within the individual's inventory of unique tastes. Under this framework, the discount rate predicts an individual's propensity to forgo current consumption in order to invest in health, education, skills, and other elements of human capital that translate into greater future returns.

According to this approach, the strong correlation between health and education is a consequence of both health and education being functions of the discount rate. This formulation challenges the conclusion that higher levels of education lead to better health outcomes and instead argues that the "third variable" of time preferences causes both.[206] Victor Fuchs, the chief proponent of the "third variable" hypothesis, approached the question of exogenous time preferences in two interesting studies. In the first, Fuchs developed an independent measure for time preferences by asking telephone survey respondents a series of questions in which they chose between a sum of money now and a larger sum in the future.[207] Then, comparing

centuated where health decisions affect intergenerational health. Consequently, even if a parent's health decisions maximize the parent's utility, they are far less likely to maximize the household's total intertemporal utility.

206 *See* Fuchs, *supra* note 66, at 95 ("[I]ndividuals with low rates of time discount would invest in many years of schooling and would also invest in health-enhancing activities . . . . [Therefore] the observed correlation is due to both schooling and health as depending upon time preference.").

207 *Id.* at 99.

the survey data with independent measures of participants' schooling and health, he found that the participants' time preferences weakly predicted their schooling and that both their time preferences and schooling predicted their health outcomes.[208]

In a more conclusive study, Peter Farrell and Victor Fuchs found additional evidence that time preferences shape, rather than are consequences of, education and health outcomes.[209] In a longitudinal examination of health behaviors in four small agricultural cities in California, Farrell and Fuchs surveyed cigarette use by a cohort of 17-year-old high school students. They then returned to the same individuals seven years later and measured their educational attainment and cigarette consumption at age 24.[210] They found that all of the variance in the 24 year-olds' cigarette use and educational attainment was explained by their smoking behavior when they were 17—when all of the subjects were in the same grade and had the same amount of formal education.[211] Farrell and Fuchs interpreted these results to mean that an exogenous "third variable" first caused smoking behaviors at age 17 and then continued to shape the individuals' educational aspirations and health behaviors from ages 17 through 24.[212] While there are different possibilities for what that "third variable" may be, their evidence is consistent with the hypothesis that time preferences are fixed and remain unaffected by schooling or other influences, and that those preferences shape both schooling and health behaviors.[213]

There are a number of problems with the Farrell and Fuchs approach. First, the study's results concerned only a small subject group from agricultural communities in California.[214] More importantly, the only education Farrell and Fuchs measured was years of formal schooling. However, it is likely that additional educational and socializing forces, including parental and household influences (and indirectly, parental schooling), had already shaped the subjects' time preferences. By the time the subjects were 17, they may have already developed clear preferences for both education and health even if those preferences were functions of social influences. Lastly, the study's approach suffers from some of the methodological challenges that plagued some of the earlier works on the human capital model.

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208 *Id.* at 111–13.

209 Farrell & Fuchs, *supra* note 66, at 229 ("[D]ifferences in time discount could explain the observed correlation between schooling and smoking. The data in this study are consistent with this hypothesis.").

210 *Id.* at 219–20.

211 *Id.* at 224–26.

212 *Id.* at 228.

213 *Id.* at 228–29.

214 *See* Grossman & Kaestner, *supra* note 64, at 89.

In those studies, scholars had difficulty in controlling for unobservable variables—such as ambition and ability—that shape both educational attainment and earnings.[215] Similar concerns should call into question the conclusion that time preferences, as opposed to other unobservable variables, shape health behaviors.

If the Farrell and Fuchs model for time preferences accurately characterizes human health behavior, then it also has the unfortunate implication that policy interventions are necessarily limited. If time preferences are exogenous, they are unchangeable, and policy interventions will have little effect in inducing individuals to make greater investments in health, schooling, or skills. Remaining policy options include more coercive devices, such as taxes or regulations, that could mitigate the degree to which those who heavily discount the future can engage in unhealthy activities. Some intrusive examples of coercive policy devices include heavily taxing (or probibiting) cigarettes, alcohol, or fatty foods, subsidizing exercise at the workplace, or mandating periodic doctors visits—perhaps as a prerequisite to driver's license renewal.[216] These policies may successfully induce healthier behavior, but they operate only as responses to fixed tendencies to invest (or not) in human capital and to engage in unhealthy behavior.[217] The third variable hypothesis precludes the possibility of ad-

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215 For attempts to account for ability in earnings, see, e.g., Zvi Griliches & William M. Mason, *Education, Income, and Ability*, 80 J. POL. ECON. S74, S99 (1972), which controlled for ability in finding the economic significance of schooling on income differences, and John C. Hause, *Earnings Profile: Ability and Schooling*, 80 J. POL. ECON. S108, S130 (1972), which found complementarity of ability for schooling and post-school experiences in generating earnings. Note, however, that attempts to include proxies for ability in earnings have resulted in very modest reductions in the schooling coefficient. *See* Hause, *supra*, at S130–31.

216 Some of these proposals are more farfetched than others. Cigarette and alcohol consumers already pay consumption taxes, and many wished-for health care reforms propose raising these taxes. *See, e.g.*, JANE G. GRAVELLE & DENNIS ZIMMERMAN, CIGARETTE TAXES TO FUND HEALTH CARE REFORM: AN ECONOMIC ANALYSIS CRS-1 (Congressional Research Service No. 94-214 E, March 8, 1994). One scholar has recently suggested a "Fat Tax." JEFF STRNAD, CONCEPTUALIZING THE "FAT TAX" 97–100 (Stanford Law School John M. Olin Program in Law and Economics, Working Paper No. 286, 2004).

217 One interesting feature in the effort to improve the health behaviors of individuals who heavily discount the future is that interventions that attempt to force healthier behaviors may not increase overall utility. *See* Becker & Murphy, *supra* note 63, at 694–95 (arguing that unhealthy behaviors may maximize utility for some individuals). According to the exogenous third variable model, individuals engage in unhealthy behaviors—behaviors that generate current utility at the expense of future utilities—because they place little value on the future. Consequently, the only justifications for interventions are that Medicaid's objective is to improve health, even if it does not improve overall utility; or, more convincingly, that unhealthy behaviors impose costly externalities, so government programs are justified in trying to amend those behaviors. *See* MANNING ET AL., *supra* note 205, at 2–8 (summarizing the external, societal costs of unhealthy behaviors by indviduals). Mandating and prescribing behavior is more socially beneficial, and thus more defensible, if individual time preferences are determined endogenously.

dressing the underlying causes of those behaviors and investment decisions.

2. *Endogenous Time Preferences*

Countering the third variable hypothesis is an intuitive, simple, and extremely useful model by Gary Becker and Casey Mulligan that allows for an endogenous determination of time preferences.[218] Whereas in Fuchs's formulation the discount rate, η, is fixed and varies exogenously across individuals,[219] the Becker and Mulligan approach models a discount rate that is determined endogenously in a relationship with other economic variables, such as wealth, prices, and parental subsidies.[220] Accordingly, discount rates will systematically vary across individuals in a process the authors call "a model of patience formation."[221]

A formal adaptation of the Becker-Mulligan intertemporal utility function to the Grossman framework combines the accumulation of patience with the consumption of, and investment in, a health stock:

$$U = \sum_t [(\eta(S))^t U_t(h_t, Z_t)] \quad t = 0, 1, \ldots, n$$

Like the model described in Part II, Z_t is consumption of standard commodities and h_t represents the number of healthy hours in period t. The innovation in this model lies in formulating η as a function of investments in S-goods, called "future-oriented capital," that an individual purchases in each period along with standard commodities (Z_t) and health inputs (M_t).[222] Citing an intellectual tradition dating back to Eugen von Böhm-Bawerk,[223] Becker and Mulligan construct the $\eta(S)$ discount rate such that individuals have the ability to increase their appreciation of the future and lower their discounting of future utilities. Formally, this means $0<\eta(S)<1$ and $\eta'(S)\geq 0$ for all $S\geq 0$. The more an individual invests in S goods, the more that individual values future utilities.

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218 *See* Gary S. Becker & Casey B. Mulligan, *The Endogenous Determination of Time Preference*, 112 Q. J. ECON. 729, 733–37 (1997).

219 *See supra* Part III.B.1.

220 *See* Becker & Mulligan, *supra* note 218, at 734–36.

221 *Id.* at 733, 754.

222 Recall that while h_t is in the utility function, h_t is a function of health inputs, previous health stock, and psychosocial factors. *See supra* Part II. So the individual's periodic allocation decisions concern health inputs, M_t, and not "enjoyable health," h_t.

223 *See* Becker & Mulligan, *supra* note 218, at 731–33, 734; *see also* EUGEN VON BÖHM-BAWERK, THE POSITIVE THEORY OF CAPITAL 237–48 (William Smart trans., 1923) (1888) (exploring the relationship between present and future economic value). For an overview of the history of economic thought on patience and related issues pertaining to investment behavior, see George Loewenstein, *The Fall and Rise of Psychological Explanations in the Economics of Intertemporal Choice*, *in* CHOICE OVER TIME 3 (George Loewenstein & Jon Elster eds., 1992).

The key to the model—the force that creates variance in discount rates across individuals—is the individual's decisions in allocating limited resources between Z_t, M_t, and S-goods. Just as the Grossman model suggested that an investment in M_t is a trade of current utility for future utility,[224] the same can be said for an investment in S-goods. A fascinating element of this model is the complementarity of time preference and health.[225] The sum of an individual's future utilities is a function of the number of future periods she lives, which in turn is a function of her health.[226] So, the healthier an individual, the more future periods she expects to enjoy, and thus the greater the total sum of her future utility. Moreover, her health itself increases her utility, so a healthier person expects more utility, *ceteris paribus*, in each future period. These expectations of greater future utility then induce her to make greater investments in S-goods since the marginal utility of health is increased by an investment in S; and the contra-positive is true as well—an individual will invest less in S-goods if they have a low expected future utility. Similarly, individuals with low discounting of future utilities have a higher marginal utility of health, so farsighted individuals will invest more in health and healthy individuals will invest more in patience.[227]

These relationships between discount rates and investment in future utilities also suggest that farsighted individuals will pursue other forms of self-investment, such as education. Therefore, like the Fuchs model, the Becker and Mulligan approach also predicts a correlation between education and health.[228] Unlike the Fuchs model, however,

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224 *See supra* Part II.

225 Although Becker and Mulligan, unlike Grossman, do not model utility as a joint utility function that includes both material consumption and health flow, their model does observe a complementarity between time preference and future utility, which in a joint utility function would also correspond to a complementarity of time preference and health. *See* Becker and Mulligan, *supra* note 218, at 736.

226 Becker and Mulligan explicitly discuss the more obvious correlation, also predicted by the model and supported by an assortment of empirical studies, between patience and wealth. *Id.* at 744–54.

The Becker and Mulligan model also predicts a correlation between wealth and patience. Consider the first-order condition of the objective function subject to a budget constraint. The marginal utility of a dollar spent on current consumption will equal the marginal utility of a dollar spent on patience, and since both the utility from consumption and the discount rate are monotonic concave functions, individuals with greater wealth will always, in equilibrium, spend more in S-goods and thus develop greater patience. Mathematically, the Becker and Mulligan first-order condition (for a two-period utility function that does not include utility from health) is $\eta'(S)[\sum_i(\eta(S))^{i-1}f^i(c^i)]=\lambda_0=f_0'(c_0)$. The proportional relationship between $\eta'(S)$ and $f_0'(c_0)$ illustrates this argument. In sum, the Becker-Mulligan model suggests that wealth, health, education, and patience will all correlate.

227 *See supra* note 206 and accompanying text.

228 Since education increases an individual's future earning potential, the Becker and Mulligan model explains the correlation between education and health as follows: Large stocks of either health or education lead to increases in future (as opposed to current) utility, so prospects of an educated or healthy life will induce investments in patience,

Becker and Mulligan offer the possibility that interventions can increase an individual's valuation of the future. A subsidy of S-goods would cause individuals to be more patient, and since future-oriented patience leads to healthier lives, providing S-goods could be a policy strategy to improve health outcomes.

This suggestion begs the question central to the Becker and Mulligan model: what are S-goods? In making the correlation between education and patience more explicit, Becker and Mulligan suggest:

> Schooling also determines S partly through the study of history and other subjects, for schooling focuses students' attention on the future. Schooling can communicate images of the situations and difficulties of adult life, which are the future of childhood and adolescence. In addition, through repeated practice at problem-solving, schooling helps children learn the art of scenario simulation. Thus, educated people should be more productive at reducing the remoteness of future pleasures.[229]

This statement is consistent with Kenkel's findings. While Kenkel observed that health-related information improved health outcomes, he discovered that formal schooling had a larger predictive effect on health outcomes even after controlling for health knowledge.[230]

The possibility that schooling itself leads to farsightedness is an additional reason to consider investing greater public funds in education.[231] However, just as the previous Section dissected the broad umbrella category of "education" into more precise patience-inducing variables, it would be useful again to identify more precise psychosocial factors, plus corresponding interventions, that lead to less discounting of the future.

Here, however, the psychology literature does not offer as much help. While experimental psychologists and behavioral economists have identified some patterns in intertemporal choices that contradict the predictions of orthodox economics, including anomalies in the expression of individual discount rates,[232] most experimental research

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which in turn will increase the marginal utilities from future health and income. So, a healthy person is motivated to be patient and thus make human capital investments that lead to future income, and similarly a person with prospects for deferred income will invest in patience and thus health. *See* Becker & Mulligan, *supra* note 218, at 743–44.

229 *Id.* at 735–36.

230 *See* Kenkel, *supra* note 73, at 302–03 ("In fact, in most cases the highly educated group chooses healthier behaviors than the group of individuals who are higbly knowledgeable about the consequences of the behaviors."); *supra* notes 82–85 and accompanying text.

231 Note that the advocates of greater investmeuts in education, discussed *supra* notes 64, 67–68 and accompanying text, advanced a different causal mechanism.

232 *See* George Loewenstein & Dazen Prelec, *Anomalies in Intertemporal Choice: Evidence and Interpretation*, *in* CHOICE OVER TIME, *supra* note 223, at 119, 124–31 (describing a behavioral model for intemporal choice); Hersh M. Shefrin & Richard H. Thaler, *The Behavioral Life-Cycle Hypothesis*, *in* QUASI RATIONAL ECON. 91, 92–101 (1991) (distinguishing between

focuses on financial investment and consumer spending behavior.[233] Aside from the Fuchs studies, which developed crude metrics for patience as it relates to health behaviors, there has been little research investigating how farsightedness affects health and whether certain psychosocial factors—other possible S-goods—have a systematic relationship with personal discount rates. Nonetheless, some empirical evidence does shed light onto some possible concrete expressions of S-goods and suggests that certain interventions could improve health by inducing farsightedness.

a. *Self Control and Hyperbolic Discounting*

Psychologists have a rich history of discussing self-defeating behaviors, and recent findings by experimental psychologists and economists have added to that history the phenomena of hyperbolic discounting.[234] Hyperbolic discounting expresses itself in two forms: first, a pervasive and excessive discounting of the future, and second, a dynamically inconsistent discount rate, where individuals discount the immediate future more heavily than subsequent transitions in time.[235] Psychologists have also identified certain coping strategies and mental heuristics that humans develop to combat destructive discounting tendencies, such as developing self-control mechanisms and commitment devices that force individuals to divert resources towards investments that enhance future wealth and improve future utility.[236] Other methods individuals use to prevent self-destructive behavior are more coercive—coined "self-commanding"—but serve similar functions.[237]

These mental heuristics resemble the spirit underlying the S-goods. To the degree that commitment devices can help individuals

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short-run and long-run behavior); Richard H. Thaler & Hersh M. Shefrin, *An Economic Theory of Self-Control*, 89 J. POL. ECON. 392 (1981), *reprinted in* QUASI RATIONAL ECON. 77, 88 (1991) (proposing a "multiself model of man"—doer versus planner—to explain the problem of intemporal choice).

233 *See, e.g.*, Colin Camerer, *Individual Decision Making*, *in* THE HANDBOOK OF EXPERIMENTAL ECONOMICS 587, 674–76 (John H. Kagel & Alvin E. Roth eds., 1995) (reviewing studies of economic behavior in various markets).

234 *See* George Ainslie & Nick Haslam, *Hyperbolic Discounting*, *in* CHOICE OVER TIME, *supra* note 223, at 57, 59–62, 71–74 (giving an overview of hyperbolic discounting and self-defeating behavior literature).

235 *See* Richard Thaler, *Some Empirical Evidence on Dynamic Inconsistency*, 8 ECON. LETTERS 201, 205 (1981).

236 *See* George Ainslie & Nick Haslam, *Self-Control*, *in* CHOICE OVER TIME, *supra* note 223, at 177, 178–85; T. C. Schelling, *Self-Command: A New Discipline*, *in* CHOICE OVER TIME, *supra* note 223, at 167, 173–76; Thaler & Shefrin, *supra* note 232.

237 One example of self-commanding is a drug addict who writes a letter addressed to his boss admitting that he has a drug addiction. The addict then gives this letter to a colleague with instructions to send the letter if the colleague should ever see the addict under the influence of illegal substances. *See* Schelling, *supra* note 236, at 167–68. Other examples include Christmas clubs that force savings for holiday shopping. *See* Thaler & Shefrin, *supra* note 232, at 77–78.

behave more optimally in making investments in future utilities, Medicaid policy should develop rules that serve the same functions. For example, studies indicate that low-income individuals are less likely to obtain recommended preventative screenings and child immunizations.[238] The evidence from the self-control literature suggests that Medicaid could consider mandating these sorts of screenings. Perhaps Medicaid policy should require individuals to show that they have received appropriate medical screenings in order to renew their driver's licenses. Similar rules could require other important but often delayed health care measures, such as child immunizations, which the poor have also underutilized.[239] A less coercive but similarly motivated approach would involve carrots, not sticks, to induce individuals to seek necessary health care. Perhaps distributing gift certificates for diapers or children's toys during immunizations or periodic check-ups would encourage desirable healthcare-seeking behavior.

Note that there is an important difference between a finding of hyperbolic discounting and an assertion of exogenous high discount rates. The latter justifies prescribing certain behaviors only if unhealthy behaviors produce costly externalities since forcing healthy behaviors onto shortsighted individuals may actually decrease the sum of their expected utility. Characterizing shortsightedness as hyperbolic discounting, however, suggests that mandating farsighted actions is actually a utility-increasing behavior because the individual is better off if forced to make long-term investments. Consequently, the hyperbolic discounting perspective suggests that there is a justification for a Medicaid intervention.

Unfortunately, mental heuristics and commitment devices, despite their success in inducing farsighted behavior, do not actually fit into the Becker and Mulligan model as S-goods. They may induce utility-increasing behavior across time, but they are merely coercive devices that force desirable behavior; they do not themselves increase a preference for future utility. The search for S-goods must move beyond simple heuristics.

b. *Integrated Health Care*

Becker and Mulligan propose that education—specifically, formal schooling—is one type of S-good.[240] They argue that formal schooling promotes farsightedness because it forces students to focus

238 *See* Woolhandler & Himmelstein, *supra* note 128, at 2874.

239 *See* Janet Currie & Duncan Thomas, *Does Head Start Make a Difference?*, 85 AMER. ECON. REV. 341, 360 (1995) (finding children that attended Head Start were more likely to have received needed immunizations).

240 Becker & Mulligan, *supra* note 218, at 735–36.

on the future and consider specific situations and difficulties of life.[241] A similar, and more precise, argument could be made with regard to health care and health education. If health-specific S-goods attune an individual to the relationship between current actions—either certain health behaviors or investments in health inputs—and future health, then they also could induce greater farsightedness and a greater appreciation for future health utility.

This mechanism is notably different from the allocative efficiency hypothesis. If certain health-related education is an S-good, then such education does more than simply disseminate information about the consequences of individuals' behavior. Instead, the education induces a heightened appreciation and greater taste for future health. This intuitively suggests that health education does not simply deter smoking by informing an individnal that smoking leads to harmful health outcomes, which is unlikely since smokers are generally aware of these consequences,[242] but rather that education impresses upon individuals the real dangers and consequential suffering that smokers endure.

If there were such health-specific S-goods,[243] we would expect to see better health outcomes from health care providers who supplement their delivery of health care with services that induce contemplation about the future. Some social programs have pursued this strategy by developing integrative systems for health care delivery. For example, Head Start, a federal program designed to improve children's learning skills, social skills, and health status, supplements its provision of childcare, early childhood education, and child medical services with counseling and education for poor parents.[244] Enrollees enjoy a comprehensive delivery of health care, education, and messages encouraging forward thinking. And consistent with the Becker-Mulligan model, Head Start attendees exhibit better health outcomes. Graduates enjoy better health, and parents of graduates are more likely to seek recommended immunizations for their chil-

241 *Id.*

242 *See* VISCUSI, *supra* note 85, at 83 (noting that risk perceptions of smoking for lung cancer risks are in fact overestimated).

243 One reviewer, in noting this lengthy discussion of hypothetical S-goods, urged the explicit reminder that we really do not know what S-goods are, or if they even exist. While this is merely admitting the obvious, the length of this discussion—prompted by the richness of the Becker and Mulligan model—requires its repetition.

244 *See* CHILDREN'S DEFENSE FUND, THE NATION'S INVESTMENT IN CHILDREN 39–40 (1991) (describing the program's goals); Fact Sheet, U.S. Dep't of Health and Human Services, Head Start: A Comprehensive Child Development Program (describing the different componants of the program geared toward parents), *at* http://www.headstartinfo.org/recruitment/cdp.htm.

dren.[245] In contrast, a much smaller fraction of children on Medicaid receive adequate screening, preventive care, and immunizations.[246]

An examination of an innovative Medicaid Extension Demonstration program in 1989 found similar results.[247] This pilot program provided additional funds to Maine, Michigan, and Florida to experiment with creative approaches to providing health care coverage to low-income children.[248] Each state selected a different strategy: Maine added funds to its existing Medicaid infrastructure, Michigan funded health care coverage through a private indemnity program operated by Blue Cross and Blue Shield, and Florida experimented with a school-based insurance program with outreach through the school lunch program and a private managed care contractor.[249]

The results were striking. Unlike the Maine and Michigan programs, which exhibited little success in improving health care utilization or outcomes,[250] Florida beneficiaries sought routine care at significantly higher levels, utilized hospital emergency rooms less, and enjoyed substantially greater health outcomes than their Florida counterparts who were not enrolled in the program.[251] The Florida program's accomplishments were largely attributed to its health education seminars, provision of a steady health care source, and abil-

245 *See* Currie & Thomas, *supra* note 239, at 359–61 (finding improved immunization rates and reduced likihood of grade repetition among Head Start enrollees); *Id.* at 343 (describing other studies' findings of lower teen pregnancy rates and reduced prison rates among Head Start enrollees); Eliana Garces et al., *Longer-Term Effects of Head Start*, 92 AMER. ECON. REV. 999, 1007 tbl. 2 (2002) (showing that African Americans who attended Head Start were less likely than African Americans from other preschools to be booked or charged with a crime); *see also* U.S. DEP'T OF HEALTH AND HUMAN SERVICES, BUILDING THEIR FUTURES: HOW EARLY HEAD START PROGRAMS ARE ENHANCING THE LIVES OF INFANTS AND TODLERS IN LOW-INCOME FAMILIES, SUMMARY REPORT 12–13 (2001) (finding the program to have a positive impact on a wide range of child development indicia and parental skills), *available at* http://www.acf.hhs.gov/programs/core/ongoing_research/ehs/ehs_reports.html#gov; Garces et al., *supra*, at 1011 (supporting the view that "Head Start participants gain social and economic benefits that persist into adulthood"). All of these resulting behaviors are consistent with an increase in preferences for future utilities.

246 *See* Currie & Thomas, *supra* note 239, at 359–61; *see also* KATE IRISH ET AL., CENTER FOR LAW AND SOCIAL POLICY, HEAD START COMPREHENSIVE SERVICES: A KEY SUPPORT FOR EARLY LEARNING FOR POOR CHILDREN 1 (2004) (compiling data showing Head Start enrollees were more likely to receive screening for medical conditions, immunizations and dental care than poor children generally), *available at* http://www.clasp.org/publications/HS_brf_4.pdf (last visited Jan. 1, 2005); Hamil R. Harris, *Vaccines Don't Reach Poor Children: More Than Half Get Too Few Shots*, WASH. POST, June 17, 1993, at D.C. 8 (noting that in 1993 more than half of the children born to parents on Medicaid in Washington D.C. did not get all of their needed immunization shots).

247 *See* Margo L. Rosenbach et al., *Access for Low-Income Children: Is Health Insurance Enough?*, 103 PEDIATRICS 1167, 1173–74 (1999).

248 *See id.* at 1167–87.

249 *See id.* at 1169–70.

250 *See id.* at 1173.

251 *See id.* at 1173–74.

ity to establish consistent relationships between providers and enrollees.[252] The study concluded that:

> Providing a health insurance card through a traditional [fee-for-service] program, whether a Medicaid-type program or a commercial indemnity plan, is simply not enough to ensure access to care for low-income children. Providing a medical home, educating families about the appropriate use of the ER, and offering after-hours care in alternative settings are some of the key factors associated with [the Florida program's] success.[253]

The key features of the Florida program can be viewed as species of S-goods—supplementary services that induce individuals to seek preventive care and develop ongoing communication between providers and patients. The Florida program appeared to succeed because the administering body was able to offer an integrative approach to health care by combining the delivery of health services with school-based outreach and educational counseling. Much like Head Start, it supplied a comprehensive intervention.[254]

None of this evidence is conclusive, and S-goods remain more of a theoretical construct than a concrete commodity. Nonetheless, the common theme underlying the success of these social programs is their provision of support, education, and counseling alongside health care. These programs appear to induce more forward-thinking health behavior, such as seeking immunizations and preventive care. Still, policymakers are left to their own creativity in developing services that deliver useful S-goods. The programs discussed here suggest that a synthesis of health care with relevant counseling and educational seminars resembles the provision of S-goods. A looser view might consider a doctor's visit itself to be an S-good since it is a device that communicates health information, such as education and vivid images of adverse health consequences of certain behaviors, that forces future-oriented thinking. Thus, there may be a long-term benefit, beyond immediate medical care, of encouraging regular doctor's visits. Like the administrators of the Florida program, policymakers could find some benefits in moving away from the standard provision

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252 *See id.* at 1174.

253 *Id.* The utility of a medical home and integrated health care delivery also lends support to the allocative and the productive efficiency models. The allocative efficiency model predicts that individuals will improve their health behaviors and seek healthcare more effectively the more informed and educated they become. *See supra* Part III.A.1. The Florida program's results indicate that beneficiaries exhibited these improvements after receiving counseling and attending health education seminars. *See* Rosenbach et al., *supra* note 247, at 1174. The productive efficiency model states that healthcare consumption becomes more effective if complemented by accompanying services, such as counseling, education, and trustworthy relationships with physicians. *See supra* Part III.A.2. The Florida results support this as well. *See* Rosenbach et al., *supra* note 247, at 1174.

254 *See supra* note 244.

of health insurance and instead develop creative interventions that impart future-oriented priorities.

One needs to realize, however, that such a comprehensive approach may involve a much more costly model for the provision of health care. For example, Currie and Thomas, in asking what they called "the $2.2 billion question," compare Head Start's price tag of $3,500 per enrollee to Medicaid's $468.[255] The Florida program also benefited from additional federal funds, though probably at a lower per-enrollee cost than Head Start.[256] Nonetheless, the evidence cited is sufficiently compelling that Medicaid policymakers should consider comprehensive and integrated systems of health care delivery, even though the program operates under an extremely tight budget.[257]

3. *Summary: Time Preferences and Health*

Models of intertemporal choice suggest that a discount rate is an important factor in predicting health behavior. Consequently, policymakers should seriously consider strategies that can induce farsightedness, which in turn encourages investments in health care. An exogenous model of time preferences leaves policymakers with few suggestions other than to mandate farsighted behavior, and even that may not be a utility-enhancing strategy. The Becker and Mulligan approach, alternatively, suggests that health care interventions can shape an individual's discounting of the future, but the challenge their model leaves is in identifying the goods or environmental influences that induce stronger preferences for future utility.

Medicaid policymakers may find fewer concrete policy suggestions in this Section as compared to the previous discussion, but there still are some potential lessons. Heuristics and mandated self-control devices, while not directly affecting time preferences, may induce more efficient health investment behaviors. Consequently, there may be some benefit to mandating periodic doctor's visits, disease screenings, or, more intrusively, exercise. Medicaid policies may further

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255 Currie & Thomas, *supra* note 239, at 361.

256 *See* Rosenbach et al., *supra* note 247, at 1167.

257 There is an interesting tension between the thrust of this Section, which seeks to encourage individuals to make appropriate investments in health care, and the previous Section, *supra* Part III.A, which suggests that nonmedical interventions deserve more emphasis and traditional healthcare deserves less. Reconciling the two sections requires distinguishing between the need to provide the unhealthy with preventative care versus the ineffectiveness of health insurance and medical care without supplemental services. *See* Woolhandler & Himmelstein, *supra* note 128, at 2874 (describing a "strong association" of lack of insurance and lack of preventative care and also finding that "patterns of health insurance coverage" seem to direct preventative services away from those who need it most). Though traditional health care may be less important than commonly believed, it cannot be wholly replaced, and the apparent tension highlights the potential value of an integrative health care system. I thank Sharon Dolovich for raising this issue.

profit from adopting a comprehensive approach toward health care delivery, where beneficiaries have access to educational and counseling services—or other benefits that capture the essence of S-goods—to accompany their medical treatment.

The central theme throughout these models and their supporting evidence is that the simple approach of providing health insurance is not an optimal strategy. There are accompanying behavioral factors, albeit difficult to identify, that significantly affect the value of health care interventions. A skeptic might dismiss this approach as merely substituting unobservable time preferences at the beginning of the causal chain with unidentifiable S-goods, and this critique reflects the need for more research into the Becker and Mulligan model and the identification of S-goods.[258] Nonetheless, the difficulty in identifying the specific behavioral variables does not discount their importance. Traditional economic analysis fails to account for these important variables, suggesting that a behavioral economic approach, though certainly messier, has great potential for policy recommendations.

IV
AVAILABLE AVENUES FOR REFORM

While the specific policy reforms suggested in the previous Part are largely speculative, they invoke new approaches to Medicaid reform that appreciate the behavioral features of health care consumption. These reforms urge a significant departure from current health care policy, which responds to poor health and health care needs by simply expanding insurance programs. A better approach to Medicaid reform is to develop creative programs that intertwine medical and non-medical interventions. Indeed, the preliminary evidence from the Medicaid Extension Demonstration program suggests that such an integrated approach to health care can incorporate social and community features into health care delivery—features that the health psychology and public health literatures deem so important.[259] Other evidence from health psychology implies that integrating health care with nonmedical resources could both increase the efficacy of any provided medical care and have a greater impact on health outcomes than medical care would have on its own.

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258 Grossman himself considers the Becker and Mulligan model to offer exciting possibilities for future research. *See* Grossman, *Human Capital*, *supra* note 47, at 401–04 (describing the Becker-Mulligan approach to understanding addiction); Grossman & Kaestner, *supra* note 64, at 92–93 (describing the Becker-Mulligan approach to understanding parental attitudes towards their children's health).

259 *See* Rosenbach et al., *supra* note 247, at 1173–74.

To pursue such a pioneering approach, however, states must reconfigure their Medicaid programs to move away from traditional fee-for-service coverage and toward more creative delivery systems. While, like any other reform, states could accomplish such a reconfiguration through major legislation, there are at least three existing policy mechanisms that can introduce policy reforms without major legislative restructuring.

A. Section 1115 Waivers

Normally, states must comply with strict standards to qualify for federal Medicaid funds.[260] Section 1115 of the Social Security Act, however, grants the Secretary of Health and Human Services the authority to waive certain federal requirements for state programs if the programs pursue the underlying legislative objectives of the Act.[261] Thus, Section 1115 waivers permit states to use federal Medicaid funding for research, demonstration, or innovative health care projects without being tightly bound to federal requirements.[262]

While Section 1115 has long provided states with the opportunity to seek Medicaid waivers, the Health Insurance Flexibility and Accountability Initiative (HIFA), an executive order announced by the Centers for Medicare and Medicaid Services (CMS) in August 2001, promulgated new waiver guidelines that strongly encourage states to seek waivers.[263] A state obtaining a waiver may, within budget neutrality restrictions, devise its own strategy toward providing health care to low-income individuals and pursue creative interventions without being constrained by Medicaid's traditional medical paradigm.[264]

Through Section 1115 waivers, states can move away from simple insurance expansions and may instead pursue social policies that ap-

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260 *See supra* note 6.

261 *See* 42 U.S.C. § 1315 (2000); KAISER COMMISSION ON MEDICAID AND THE UNINSURED, THE HENRY J. KAISER FAMILY FOUNDATION, SECTION 1115 MEDICAID AND SCHIP WAIVERS: POLICY IMPLICATIONS OF RECENT ACTIVITY 1 (2003), *available at* http://www.kff.org/medicaid/4121-index.cfm (last visited Jan. 1, 2005).

262 *See* KAISER COMMISSION ON MEDICAID AND THE UNINSURED, THE HENRY J. KAISER FAMILY FOUNDATION, SECTION 1115 WAIVERS IN MEDICAID AND THE STATE CHILDREN'S HEALTH INSURANCE PROGRAM: AN OVERVIEW 3 (2001) (describing Section 1115 as "unprecedented in its sweep" of authority), *available at* http://www.kff.org/medicaid/4001-index.cfm (last visited Jan. 1, 2005)

263 42 C.F.R. § 457 (2003); *see also* KAISER COMMISSION ON MEDICAID AND THE UNINSURED, *supra* note 261, at 1; Fact Sheet, Centers for Medicare & Medicaid Services, Health Insurance Flexibility and Accountability (HIFA) Demonstration Initiative, *available at* http://www.cms.hhs.gov/hifa/default.asp (last visited Jan. 1, 2005).

264 While the availability of waivers creates valuable opportunities to devise useful and innovative health programs, some states have used the waiver program instead to reduce their own expenditures on health care programs or to channel federal funds away from low-income beneficiaries and toward other populations. *See* KAISER COMMISSION ON MEDICAID AND THE UNINSURED, *supra* note 261, at 1–2.

preciate the behavioral component of health care consumption.[265] Medicaid waivers have already enabled some states to develop innovative health care approaches. For example, Oregon obtained a Section 1115 waiver in the early 1990s to redesign its Medicaid program.[266] The Oregon Health Plan rejected a standard system based on entitlements and instead invested state funds and federal matching dollars into expanded coverage and preventive care that has the broadest possible impact.[267] Another state program under Section 1115 receiving praise is Tennessee's "TennCare,"[268] which has redirected federal dollars into low-cost community-based programs that have improved health outcomes on several measures.[269] Section 1115 waivers have now been granted to nineteen states and the District of Columbia, including many new approvals and extensions since HIFA was announced in 2001,[270] and additional SCHIP Section 1115 demonstration projects have received CMS approval for fifteen states.[271] This

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265 For an example of social policy that appreciates the behavioral component of health care consumption, see Rosenbach et al., *supra* note 247. *See also* Lisa Dubay & Genevieve Kenney, *Health Care Access and Use Among Low-Income Children: Who Fares Best?*, 20 HEALTH AFF. 112, 112, 117–19 (2001) (recognizing that "[e]xpanding public coverage may not be sufficient to ensure that all low-income children have access to comprehensive and high-quality care").

266 *See* Fact Sheet, Centers for Medicare & Medicaid Services, Oregon Statewide Health Reform Demonstration, *available at* http://www.cms.hhs.gov/medicaid/1115/orfact.asp (last visited Jan. 1, 2005).

267 *See* Martin A. Strosberg, *Introduction*, *in* RATIONING AMERICA'S MEDICAL CARE: THE OREGON PLAN AND BEYOND 3, 3–5 (Martin A. Strosberg et al. eds., 1992) (describing the broad contours of the Oregon plan); Jean I. Thorne, *The Oregon Approach to Comprehensive and Rational Health Care*, *in* RATIONING AMERICA'S MEDICAL CARE: THE OREGON PLAN AND BEYOND, *supra*, at 24, 28–30. Many have criticized the Oregon plan for its explicit rationing of care. *See, e.g.*, Stephen M. Ayres, *Rationality, Not Rationing in Health Care*, *in* RATIONING AMERICA'S MEDICAL CARE: THE OREGON PLAN AND BEYOND, *supra*, at 132. While ethicists are divided on the permissibility of rationing, *see, e.g.*, CALLAHAN, *supra* note 20, at 20–26, health policy experts generally agree that Oregon's effort to invest its Medicaid dollars into services that have the broadest social impact is one that states would do well to follow.

268 *See* TennCare Reform Act of 2002, 2002 Tenn. Pub. Acts 880 (codified as amended in scattered parts of TENN. CODE ANN. § 71), *available at* http://www.tennessee.gov/tenncare/Reformbill.pdf/ (last visited Jan. 1, 2005); Christopher J. Conover & Hester H. Davies, *The Role of TennCare in Health Policy for Low-Income People in Tennessee* 24–25, 52–53 (Urban Institute, Occasional Paper No. 33, Feb. 2000), *available at* http://www.urban.org/UpdatedPDF/occa33.pdf (last visited Feb. 2, 2005).

269 *See* James F. Blumstein & Frank A. Sloan, *Health Care Reform Through Medicaid Managed Care: Tennessee (TennCare) as a Case Study and a Paradigm*, 53 VAND. L. REV. 125, 135–36 (2000) (summarizing the generally positive data on TennCare's impact).

270 CENTERS FOR MEDICARE & MEDICAID SERVICES, SECTION 115 HEALTH CARE REFORM DEMONSTRATIONS (providing a comprehensive list of current Medicaid waivers and waiver applications), *available at* http://www.cms.hhs.gov/medicaid/1115/statesum.pdf (last visited Jan. 1, 2005).

271 *See* CENTERS FOR MEDICARE & MEDICAID SERVICES, STATE CHILDREN'S HEALTH INSURANCE (SCHIP) APPROVED SECTION 1115 DEMONSTRATION PROJECTS 1–4, *available at* http://www.cms.hhs.gov/schip/stateplans/waivers/1115waivers.pdf (last updated Nov. 17, 2004).

pattern of granting Section 1115 waivers suggests that Medicaid reforms will likely rely on state experimentation.

The efficacy of this new wave of Medicaid experiments has yet to be determined (though CMS reporting requirements should produce valuable evaluation data soon), but some early successes are consistent with the behavioral approach outlined here. The Florida initiatives under the Medicaid Extension Demonstration program suggest that innovative programs can yield substantial results, and the Oregon Health Plan and TennCare reflect the efficacy of certain low-cost, community-based heath initiatives. This Article, and the broad literatures it cites, strongly suggests that policy innovations should continue this move away from programs that rest exclusively on medical care.

B. State Children's Health Insurance Program

The State Children's Health Insurance Program,[272] passed by Congress as part of the Balanced Budget Act of 1997,[273] dedicated $40 billion in federal funding over 10 years to provide health coverage for low-income children.[274] Unlike previous public insurance expansions, which were merely built upon existing Medicaid programs and made low-income children eligible for certain medical care on a fee-for-service basis, SCHIP provides states with considerable latitude in selecting a health insurance policy strategy.[275] States may simply follow previous expansions of Medicaid, design new health insurance programs that mimic the cost sharing and benefit packages typical of private plans, or build new programs that augment insurance plans with accompanying services.[276]

SCHIP grants states unusual flexibility in their use of federal dollars. States may set their own eligibility requirements and fund pro-

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272 42 U.S.C. §§ 1397aa–1397jj (2000).

273 Pub. L. No. 105-33, 111 Stat. 251 (1997).

274 *See* 42 U.S.C § 1397dd (2000); Fact Sheet, Centers for Medicare & Medicaid Services, Welcome to the State Children's Health Insurance Program ("SCHIP is the single largest expansion of health insurance coverage for children since the initiation of Medicaid in the mid-1960s."), *available at* http://www.cms.hhs.gov/schip/about-SCHIP.asp.

275 *See* Robert F. Rich et al., Symposium, *The State Children's Health Insurance Program: An Administrative Experiment in Federalism*, 2004 U. ILL. L. REV. 107, 110–116 (contrasting Medicaid as a "prime example of the old, traditional model of [federal-state] cooperation" with the flexibility of SCHIP as a "new form of cooperative federalism"). This more flexible approach follows, in part, the strategy employed in the much smaller and selective Medicaid Extension Demonstration program, authorized by Congress in 1989. *See* Rosenbach et al., *supra* note 247, at 1167.

276 *See* Rich et al., *supra* note 275, at 116 ("[S]tates have full discretion in deciding which providers may participate in the program, what delivery system will be used to provide health care benefits, and what procedures to use for monitoring quality of care."); Barbara J. Zabawa, *Making the Health Insurance Flexibility and Accountability Waiver Work Through Collaborative Governance*, 12 ANN. HEALTH L. 367, 378 (2003) (describing new "collaborative governance" ideas for state Medicaid experiments).

grams that benefit the working poor and low-income individuals who may not otherwise qualify for AFDC and TANF.[277] In addition, federal funds from SCHIP offer further opportunities for flexibility under the liberal Section 1115 waiver policy.[278]

It is unclear how much policy innovation the additional SCHIP funds have sparked. One recent study by the Urban Institute heralded "States as Innovators in Low-Income Health Coverage," but characterizes the innovations as the extension of insurance benefits to the previously uninsured rather than as a comprehensive reform to health care delivery that might address important behavioral issues.[279] But certainly there are opportunities for program creativity, particularly in Medicaid's growing reliance on managed care systems,[280] and Medicaid administrators should consider the substantial health effects of psychosocial variables in their future innovations.

C. Early and Periodic Screening, Diagnosis, and Treatment

In the years after creating Medicaid, Congress augmented the program's coverage to provide early and periodic screening, diagnosis, and treatment (EPSDT) services to Medicaid-eligible children.[281] Congress designed these revisions to give children access to preventive health care—such as vision, hearing, and dental services—that preempt the onset of childhood illness and identify children with disabilities in need of early attention.[282] The EPSDT reforms enacted by Congress, as part of the Omnibus Budget Reconciliation Act of 1989,[283] were particularly noteworthy in two pertinent respects. First, Congress obligated participating states to provide a comprehensive

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277 *See* FRANK ULLMAN ET AL., THE STATE CHILDREN'S HEALTH INSURANCE PROGRAM: A LOOK AT THE NUMBERS 3–5 (Urban Institute, Assessing the New Federalism, 1998) (describing the requirements and flexibility for states under the program), *available at* http://www.urban.org/UploadedPDF/occ4.pdf (last visited Jan. 1, 2005); Jonathan R. Bolton, *The Case of the Disappearing Statute: A Legal and Policy Critique of the Use of Section 1115 Waivers to Restructure the Medicaid Program*, 37 COLUM. J.L. & SOC. PROBS. 91, 97 (2003) (noting that SCHIP allows states to cover low-income children who may not be eligible for Medicaid and critiquing the "strong incentives" for states to use their SCHIP allotments to expand coverage rather than Medicaid).

278 *See* KAISER COMMISSION ON MEDICAID AND THE UNINSURED, *supra* note 262, at 5 (describing standards for 1115 waivers under SCHIP); Rich et al. *supra* note 275, at 122.

279 JOHN HOLAHAN & MARY BETH POHL, STATES AS INNOVATORS IN LOW-INCOME HEALTH COVERAGE 33–37 (Urban Institute, Assessing the New Federalism, 2002), *available at* http://www.urban.org/UploadedPDF/310519_DP0208.pdf (last visited Jan. 1, 2005).

280 *See* ROBERT HURLEY & STEPHEN ZUCKERMAN, MEDICAID MANAGED CARE: STATE FLEXIBILITY IN ACTION 7–12 (Urban Institute, Assessing the New Federalism, 2002), *available at* http://www.urban.org/UploadedPDF/310449.pdf (last visited Jan. 1, 2005).

281 *See* 42 U.S.C. §§ 1396a(a)(10), 1396a(a)(43), 1396d(a)(4)(B), 1396d(r)(5) (2000).

282 *See, e.g.*, H.R. Rep. No. 101-247, at 395–401 (1989), *reprinted in* 1989 U.S.C.C.A.N. 1906, 2121–27; S. Rep. No. 90-744, at pt. II-G (1967), *reprinted in* 1967 U.S.C.C.A.N. 2834, 2869–71.

283 Pub. L. No. 101-239, 103 Stat. 2106.

package of preventive services that met reasonable standards of medical necessity,[284] and second, Congress expanded EPSDT services to include "[s]uch other necessary health care, diagnostic services, treatment, and other measures described [as medical assistance] to correct or ameliorate defects and physical and mental illnesses and conditions discovered by the screening services, whether or not such services are covered under the State plan."[285] In effect, these amendments required states to provide Medicaid coverage for any medical service "identified as necessary through the EPSDT program."[286]

In recent years, federal courts—prodded by aggressive advocates for the poor—have become the forum where useful EPSDT policy is made. Most litigation involves advocates suing state officials under 42 U.S.C. § 1983 to deliver "medically necessary" health care services, as the statute requires.[287] However, some rulings have held that states must play proactive roles in health care delivery, such as administering outreach programs to screen at-risk children for health dangers and deliver preventative care. For example, in 2002 the Eighth Circuit "reminded" the State of Arkansas that it was required by law to inform Medicaid beneficiaries of their entitlements.[288] In an earlier case, the Seventh Circuit deemed Indiana's screening system inadequate because it did little to reach out to Medicaid beneficiaries and bring them into the state's health care system.[289]

If states assume, or are judicially required to assume, responsibility to play a proactive role in delivering preventative health care, then there would be a significant role for behavioral considerations. Health and social psychological data can inform information campaigns to enroll individuals and induce adherence to reasonable preventative regimens. More importantly, EPSDT outreach affords an opportunity to integrate health care delivery with other social services.

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284 42 U.S.C. §§ 1396a(a)(43), 1396d(r).

285 42 U.S.C. § 1396d(r)(5).

286 135 Cong. Rec. S6900 (daily ed. June 19, 1989) (statement of Sen. Chafee).

287 *See, e.g.*, Collins v. Hamilton, 349 F.3d 371, 372 (7th Cir. 2003); Pittman v. Sec. Florida Dep't of Health & Human Servs., 998 F.2d 887, 889 (11th Cir. 1993); Pereira v. Kozlowski, 996 F.2d 723, 724 (4th Cir. 1993).

288 Pediatric Specialty Care, Inc. v. Ark. Dep't of Human Servs., 293 F.3d 472, 481 (8th Cir. 2002) (

> Finally, we remind the state that it has a duty under 42 U.S.C. § 1396a(43) to inform Medicaid recipients about the EPSDT services that are available to them and that it must arrange for the corrective treatments prescribed by physicians. The state may not shirk its responsibilities to Medicaid recipients by burying information about available services in a complex bureaucratic scheme.

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289 Bond v. Stanton, 655 F.2d 766, 771 (7th Cir. 1981) ("In short, we conclude that Indiana has still not complied with this court's mandate that 'EPSDT' programs must be brought to the recipients." (quoting Stanton v. Bond, 504 F.2d 1246, 1251 (7th Cir. 1974))).

Such outreach could constitute a valuable dialogue on health between state actors and low-income individuals who are at risk of suffering from poor health.

In sum, Section 1115 waivers, SCHIP demonstration projects, and EPSDT programs are all avenues that offer opportunities to incorporate the lessons of behavioral health research. While some states are taking these opportunities seriously, and some have even pursued policy reforms that incorporate the important role of psychosocial issues in health, these mechanisms remain mostly unexplored and underutilized in pursuing reforms that pay heed to behavioralism. But the opportunities are wide open, as the three mechanisms offer a varied menu for reform-minded policymakers: Section 1115 waivers and SCHIP projects grant flexibility to innovative administrators, while EPSDT actions open possibilities for public and private advocates. These programs also suggest a role for each branch of the federal government in reforming Medicaid policy: HIFA indicates the executive branch's enthusiasm for flexibility, SCHIP reflects Congress's appreciation for experimentation, and EPSDT signifies the judicial branch's duty to ensure that states play proactive roles in delivering preventative care. These programs present genuine opportunities for Medicaid to invest public funds in the policy proposals suggested throughout this Article and to move four decades of Medicaid policy into a more useful, multi-tooled paradigm. Perhaps more significant, these alternative mechanisms offer states opportunities to experiment. While devising successful programs will certainly take time and creativity, policymakers should heed the lessons from combining economics with health psychology and depart from the traditional insurance-based strategy.

CONCLUSION

The consideration of behavioral variables for Medicaid reform rests on the intersection of a valuable economic model and years of useful research in health psychology. The Grossman model—the leading model in health economics—has served as a foundation for many empirical examinations that estimate health outcomes from economic data and one psychosocial variable: education. This Article suggests that consulting research in health psychology and intertemporal decision theory can allow the Grossman model to incorporate a broad variety of additional psychosocial factors and further explicate the relationship between personal variables and health outcomes.

These results are particularly useful to Medicaid policymakers, who largely have neglected psychosocial variables in implementing a health insurance program that rests chiefly on orthodox economic assumptions. And these results are also tremendously important for

public health in the United States. Medicaid has become "the workhorse of the U.S. health system"[290] and has been "called upon to solve all manner of health-related problems that no other institution or sector of the economy is willing to address."[291] Creative use of Medicaid's considerable funds, and addressing the real policy challenge of health disparities, rather than health insurance disparities, would bring significant benefits to both Medicaid beneficiaries and taxpayers. This Article questions the efficacy of Medicaid's current course, and it offers a host of behavioral factors that help determine health outcomes and deserve a role in Medicaid policy. Policymakers should avoid paying exclusive attention to the expansion of health care insurance, despite the loud political calls, and instead direct their efforts and resources toward understanding the impact of psychosocial issues on health.

290 Alan Weil, *There's Something About Medicaid*, 22 HEALTH AFF. 13, 15 (2003).
291 *Id.* at 20.